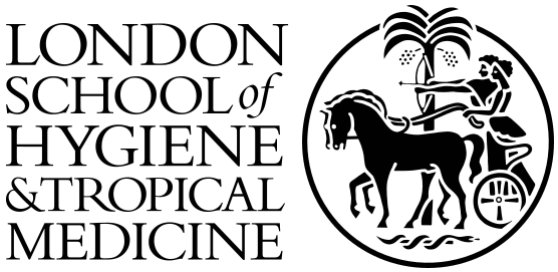

Perceptions of the Usefulness of Public Health Research for Policy in Ghana

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Abstract

This study aimed to explore researchers' and policy stakeholders' perceptions of the usefulness of public health research for policy, using the example of maternal health in Ghana. Sixty-nine government decision-makers, maternal health policy stakeholders and researchers were interviewed.

Concepts of research were broad. Research was dichotomised into 'big', formal research and 'small', applied research such as operations research. 'Small research' was highly valued, due to its speedy completion and its focus on topics pertinent to service delivery; big research was not always considered necessary.

Effectiveness research, one type of 'big research', was not highly valued. Interviewees tended to feel that 'effective' policies and programmes could be designed once there was a thorough understanding of the situation. There was an implicit assumption that as long as these interventions were implemented well, they would be effective.

Six dimensions of local applicability/transferability were identified. The most influential factors were the ease with which the intervention could be implemented, the study's congruence with interviewees' previous experiences and the perceived need for the intervention. Little attention was paid to study findings. Judgements of an intervention's potential effectiveness tended to be based on the ease of implementation or knowledge of similar projects. Adaptation was considered to be crucial, although often conceptualised not as a factor within local applicability/transferability assessments, but rather a distinct, essential step in the research use process.

This study suggests that the factors of local applicability/transferability frequently cited in the literature do not reflect those considered to be most important by stakeholders in Ghana.

More funding is needed for research in low income countries, whose agenda is set by those in-country. There is a need for greater awareness of, and dialogue about, the possible differences in perceptions of and values attributed to public health research in high and low income countries.

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Acronyms and Abbreviations

CHPF	Community Health and Family Planning study
CHPS	Community-Based Health Planning and Services initiative
COHRED	Council on Health Research for Development
CONSORT	Consolidated Standards of Reporting Trials
DFID	Department for International Development, UK
DHS	Demographic and Health Survey
ESRC	Economic and Social Research Council (UK)
EU	European Union
GHS	Ghana Health Service
GPRTU	Ghana Private Road Transport Union
HIRD	High Impact Rapid Delivery initiative
HIV/AIDS	Human immunodeficiency virus / Acquired immunodeficiency syndrome
HRC	Health Research Centre
HRU	Health Research Unit
KNUST	Kwame Nkrumah University of Science and Technology
LSHTM	London School of Hygiene and Tropical Medicine
MDG	Millennium development goal
MICS	Multiple Indicator Cluster survey
MOH	Ministry of Health, Ghana
MPH	Masters in Public Health
NGO	Non-governmental organisation
NHIS	National Health Insurance Scheme
Noguchi	Noguchi Memorial Institute for Medical Research, University of Ghana
PPME	Policy, Planning, Monitoring and Evaluation Department, Ghana Health Service
R3M	Reducing Maternal Mortality and Morbidity
RCT	Randomised controlled trial

STROBE	Strengthening the Reporting of Observational studies in Epidemiology
SWAp	Sector wide approach
TBA	Traditional birth attendant
TREND	Transparent Reporting of Evaluations with Non-randomised Designs
UK	United Kingdom
UN	United Nations
UNFPA	United Nations Population Fund
UNICEF	United Nations Children's Fund
USAID	United States Agency for International Development
WHO	World Health Organisation

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Chapter 1:
Introduction and Literature Review

1. Background to the Study

In recent decades there has been a focus on encouraging research use in policy and practice. This was initiated in clinical medicine in high income countries, but in recent years attention and effort have also spread to public health and policy as well as the encouragement of research use in low income countries. Although the 'evidence-based movement' focuses particularly on ways of increasing the use of research, the current study is based on the premise that 'more' research use may not necessarily lead to 'better' policy or practice. The use of research that is not appropriate for a setting could be as harmful or wasteful of resources as the non-use of appropriate research. The current study will particularly focus on public health research, using maternal health in Ghana as a case study example. Definitions of public health research vary; the current study uses a broad definition that incorporates health promotion and health systems/services research (McCarthy and Clarke, 2007).

Given limited resources, it is not possible to conduct studies on all issues in all settings before making a decision. Therefore if research is to be used to inform decisions, it may be beneficial to consider studies conducted in other settings. Decision-makers must decide whether research conducted elsewhere is appropriate for use in their setting, that is, whether it is locally applicable/transferable. In recent years there has been growing awareness of the importance of understanding the context in which studies are conducted and of the need to consider the external validity of research. However there have been few studies exploring these issues from the perspectives of either researchers or potential users of research.

The process of judging whether findings are applicable/transferable to a new setting is complex and poorly understood. Poor assessments of local applicability/transferability could prevent effective interventions from being introduced in settings where they could be beneficial, or could lead to

interventions being inappropriately introduced to settings where the positive effect seen in the original setting would not be replicated.

Improved understandings of the factors considered important for local applicability/transferability assessments would allow researchers to tailor their data collection and reporting in order to better meet potential users' needs.

Researchers often hope, or expect, that their research findings could be of use to people beyond the original study setting. The current study set out to explore the factors that may affect whether or not decision-makers perceive research findings from other settings to be of potential use to them. The potential benefit of an improved understanding of local applicability/transferability may be greater for low income countries, as they have fewer resources with which to conduct their own research. It therefore follows that if they were to use research, it would be more likely to be from other countries. Their limited resources also mean that the inappropriate use or non-use of research could be more damaging than in high income countries, since it could waste precious health sector funds on ineffective or harmful interventions.

2. Aim and Objectives

This study aimed to explore perceptions of the use and usefulness of maternal health research for decision-making in Ghana. To explore this issue, three objectives were set:

1. To understand the context of maternal health policy, programmes and research in Ghana
2. To explore perceptions of research use in decision-making
3. To understand conceptualisations of the local applicability/transferability of maternal health research in order to develop an improved framework

3. Outline of Thesis

This initial chapter provides an introduction to the current study and presents a review of the literature. It explores the development of the evidence-based movement, theories of research use in decision-making, as well as the issue of external validity and its relation to local applicability/transferability. It concludes by considering the evidence-based movement with regards to low income countries and in relation to the topic of maternal health.

The second chapter presents the rationale and conceptual framework for the study, followed by a description of the aim, objectives and methods used.

The study findings are presented in chapters three, four and five. Chapter three describes the maternal health situation in Ghana, as perceived by the interviewees, as well as the maternal health decision-making and research production contexts.

Chapter four explores perceptions of the use and usefulness of research for policy in Ghana. This includes how research was defined, what types of research were considered useful and perceptions of research use (including perceptions of research conducted outside of Ghana).

The fifth chapter examines perceptions of the local applicability/transferability of research. Chapter six presents a discussion of the findings and their implications, some reflections on the methods used and recommendations based on the study's findings.

4. Literature Review

This literature review will start by briefly describing the history of the evidence-based movement, its focus on effectiveness and the challenges and criticisms it has faced as it expanded into public health. It will then consider how understandings of the nature of evidence, decision-making and research 'use' have developed since the early stages of the movement. Key theories of research use will then be reviewed. The concept of external validity will be considered in relation to research, leading to discussion of how the more specific concepts of local applicability/transferability can be assessed and what dimensions they may contain. The recent push for research use in low income countries will be considered and the particular importance of local applicability/transferability in such settings will be highlighted. Finally, the implications for the field of maternal health will be discussed.

4.1 The evidence-based movement

The evidence-based movement has gained strength since its beginnings in clinical medicine in the early 1990s (Evidence-Based Medicine Working Group, 1992; Klein, 2003). It is based on the principle that policies and practice will be 'better' if they are informed by research evidence, rather than unsystematic observations, anecdotes, intuition or beliefs (Evidence-Based Medicine Working Group, 1992; Tang et al., 2003; Fielding and Briss, 2006). Starting with the realisation that clinicians continued to use treatments years after they had been proven inferior, the movement arose in a climate of increased demand for accountability, transparency and efficiency (Davies et al., 2000; Cookson, 2005; Kemm, 2006). Lay populations have become more informed and are less inclined to place 'blind faith' in experts and authority figures (Davies et al., 2000; Mulgan, 2005). Increasing calls for accountability have not been limited to public services and policies; within research, pressure to prove to funders that

money has been well spent has also increased (Hanney et al., 2002). Growth in the size and capacity of the research community, alongside information technology developments, has led to an increase in the quantity and quality of research being produced, as well as improvements in its accessibility (Davies et al., 2000; Anderson et al., 2005; Cookson, 2005). These developments have all helped to create a context in which calls for evidence-based policy and practice have flourished.

Initially the movement focused on improving the methods and dissemination of research evidence (Lomas, 1997; Black, 2001; Glasgow et al., 2006b). Evidence-based medicine firmly established a hierarchy of evidence, with randomised controlled trials (RCTs) and systematic reviews (particularly those including meta-analyses of RCTs) considered to be the gold standard (McGuire, 2005).

The use of the term 'movement' to describe the evidence-based field is not accidental, since it manifests characteristics of social/political movements (e.g. a strong belief in a shared purpose, new ways of thinking and clear strategies to achieve their goals) (Pope, 2003). By reflecting on the movement as a whole and considering its key traits, implicit assumptions and viewpoints, the context which frames the current study can be explored. It is clear that, in the Western world at least, the evidence-based movement has become the dominant paradigm for health and healthcare. Its approaches and supporters have been described as evangelical, such is the strength of their conviction and their desire to convince others of its worth (Traynor, 2000; Pope, 2003). Some have argued that its dominance is so great that it actively excludes other viewpoints (as well as other forms of evidence) (Traynor, 2000; Holmes et al., 2006). The intrinsic worldview of the movement could be considered positivist, firstly due to its prioritisation of rigorous effectiveness evaluations over other forms of evidence and secondly, because of its singular dominance over other paradigms (Holmes et al., 2006).

However by referring to it as a 'movement' it should not be assumed that it is a discrete, homogenous entity or that all of the actors involved hold identical views, with little dissent or debate amongst them. Behague et al. refer to evidence-based policy-making as "a movement in the making" [p1540], suggesting a dynamic process continually shaping the movement through a loosely-connected network of actors (Behague et al., 2009).

There have been attempts to replace the term 'evidence-based' with other phrases which better represent the fact that research evidence is only one of many factors that influence decisions (e.g. 'evidence-informed') (Bowen and Zwi, 2005; Oxman et al., 2009). However no other term has been used consistently; the widespread use of the term 'evidence-based' persists. For this reason the current study will also use the term 'evidence-based', whilst recognising the arguments that led to alternative terms being suggested.

4.1.1 Evidence-based medicine...and beyond

As the evidence-based movement expanded beyond medicine to other areas, particularly public health, two main areas of debate arose as to the applicability of the concept of an evidence-based approach. The first focused on either the impracticality or inappropriateness of the evidence hierarchy in terms of research production and evidence appraisal. The second area of debate involved the inherent nature of public health and whether this made it particularly unsuited to an evidence-based approach.

Black pointed out that evidence-based policy was "qualitatively different" [p277] from evidence-based medicine, rather than being an extension of it (Black, 2001). He argued that public health interventions and policies are different from clinical medical interventions. Public health focuses on populations or communities and often involves complex, multi-component interventions. This contrasts with clinical medicine, where interventions focus on individuals, are often fairly simple or direct and tend to have shorter time lags (and shorter, more direct, causal pathways) between the

intervention and outcome (Brownson et al., 1999; Frommer and Rychetnik, 2003).

Evidence-based medicine focuses almost exclusively on 'what works' and this is reflected in the evidence hierarchy. Critics pointed out that the hierarchy does not reflect an appreciation that decision-makers need answers to questions other than merely 'what works' (Lomas, 2005; Sheldon, 2005). They argue that RCTs and traditional systematic reviews may not be the most appropriate methods to use for these other questions (Frommer and Rychetnik, 2003; Cookson, 2005; Kemm, 2006). Instead it is recognised that different types of research studies may answer different types of policy question (Hanney et al., 2002; Cookson, 2005; Mays et al., 2005; Lavis, 2009).

Debate has been most fierce concerning the question of whether or not the RCT is an appropriate study design for evaluating the effectiveness of complex public health interventions or policies. Some believe that RCTs are simply not possible to conduct for complex public health interventions (Heller and Page, 2002; McGuire, 2005; Kemm, 2006). Others argue that RCTs are inappropriate, since they attempt to remove contextual elements in order to ascertain causality, when context is an important interacting component of interventions and should in fact be reported on and considered fully (McGuire, 2005; Kemm, 2006; Davies et al., 2008). RCTs' main focus is on whether or not an intervention is effective. A criticism of the method is that they fail to answer other important questions, such as how an intervention works or in which contexts is it effective (Davies et al., 2000; Cookson, 2005). Finally, some have highlighted the risk that researchers may attempt to 'fit' or simplify an intervention so that it can be more easily evaluated using a RCT design, thus making it less effective (Bonell, 2002; Kemm, 2006; Behague and Storeng, 2008).

There have been staunch counter-arguments to these criticisms, highlighting the advantages of RCTs and their feasibility for even complex interventions. For example, some argue that RCTs offer the strongest

option for minimising selection bias and to control confounding and so have the greatest potential for eliminating the role of chance in explaining study findings (Habicht et al., 1999). Others have evaluated complex, large-scale interventions using this study design, showing that they can be possible (Manandhar et al., 2004). Indeed, the Medical Research Council has produced guidelines for developing and evaluating complex interventions using an RCT design (Medical Research Council (MRC), 2000). There has also been substantial methodological work into the design and analysis of cluster-randomised trials (which are often the most appropriate form of RCT for large, population-level intervention evaluations) (Campbell et al., 2004; Eldridge et al., 2008). Ways of incorporating contextual and other intervention data into RCTs have been explored, for example through the inclusion of process evaluations (Kirkwood et al., 1997; Rychetnik et al., 2002; Hawe et al., 2004b). Methodological developments have also been made to improve the rigour of evaluations conducted using non-randomised designs (Habicht et al., 1999; Ukoumunne et al., 1999; Wiggins et al., 2006).

Some point out that evaluation in general can be particularly difficult for public health interventions (Neuberger, 2001; McGuire, 2005). Often the complexity and scale of public health interventions require evaluations that are also complex and large scale. These interventions can affect a range of outcome types, some of which are easier to measure than others (Frommer and Rychetnik, 2003; Anderson et al., 2005). This can lead to greater variety of outcome measures and proxy indicators used, which makes comparing, appraising and summarising the evidence more difficult (Kemm, 2006).

Since complex public health interventions work at a behavioural or social level, as opposed to a biological or molecular level, the context of the intervention is of great importance, affecting both its implementation and its effect (Frommer and Rychetnik, 2003; Kemm, 2006). Contextual information can help explain how an intervention worked (or why it didn't)

and in which other contexts it may also work. Many have highlighted the importance of gathering and reporting contextual information and lamented the fact that it is frequently lacking in reports of intervention evaluations and systematic reviews. (Kirkwood et al., 1997; Davies et al., 2000; Frommer and Rychetnik, 2003; Tang et al., 2003; Cookson, 2005; Victora et al., 2005; Glasgow, 2008; Rabin et al., 2008). Despite this, it remains somewhat unclear what specific information 'context' refers to: as Lomas et al. put it, "trying to capture the concept of context is like catching clouds" [p13] (Lomas et al., 2005). A range of suggestions have been offered, including implementation information (e.g. process evaluation data), the intervention's acceptability or the characteristics of the setting in which the intervention was delivered (Kirkwood et al., 1997; Victora et al., 2005; Rabin et al., 2008). Context links with the issues of external validity and the applicability/transferability of findings from one setting to another; these will be discussed in greater detail later in this chapter.

The challenges of appraising public health research have been discussed widely. As mentioned above, the diversity and complexity of evaluations makes comparison and synthesis difficult (Florin, 1996; Jackson et al., 2004; Bravata et al., 2005). Disparate interpretations can be derived when study designs, interventions, contexts and outcome measures differ (Klein, 2003). This can not only affect individuals' personal evidence appraisals, it can also make it difficult to reach a consensus on the 'meaning' of the evidence (Florin, 1996; Cookson, 2005).

Aside from these methodological challenges, there exist other difficulties inherent in the nature of evidence-based public health decision-making. Ideologies, beliefs and values often play a far greater role in public health decision-making compared to clinical practice (Davies and Nutley, 2002; Hanney et al., 2002). Some consider this decision-making process to be more complex than clinical decision-making (Kemm, 2006). Effectiveness may not be the most important priority; there may be competing interests and multiple goals (Hunter, 2003). This means that research findings

provide a weaker argument for public health than for clinical medicine and are less able to challenge preconceptions (Hunter, 2003; Cookson, 2005). For example, it is easier to dismiss findings as 'not relevant' if the intervention was evaluated in a different context. It can also be easier to ignore evidence when there is no explicit consensus regarding its overall meaning (Florin, 1996).

This gives a flavour of some of the debates about evidence-based public health; a more detailed consideration of all the arguments is beyond the scope of this chapter. Whilst more nuanced debates continue as to the meaning and realities of evidence-based public health, or the extent to which research does (and should) influence decision-making, it is generally accepted that public health decision-making should consider research findings to some extent. Regardless of one's stance on the appropriateness or feasibility of RCTs for public health, there is now a general consensus that different methods are required for different types of questions and that contextual information is important for public health decision-making (Raphael, 2000; Victora et al., 2004; Mays et al., 2005; Sanson-Fisher et al., 2007).

Despite the clear importance of work developing research methodologies, there has also been a realisation that improving research quality is unlikely to single-handedly lead to more evidence-based decision-making (Sauerborn et al., 1999; Choi, 2005a; Dobrow et al., 2006). Engaging with the literature on research utilisation, as well as the nature and process of decision-making, has allowed the field to develop more sophisticated understandings of the process of research use and decision-making.

4.1.2 Theories of decision-making

The early days of the evidence-based movement were bounded by some fairly naïve and simplistic assumptions. The theory implicit in the early days of the evidence-based movement held decision-making as a discrete,

rational event (Sanderson, 2002). The focus, in terms of research utilisation, was on direct, instrumental forms of use, whereby a problem is identified by decision-makers and then 'solved' by research (Buse et al., 2005). Just as the rational model of decision-making has been criticised for being too unrealistic, so too has this model of direct, instrumental use. With time, many came to realise that both the decision-making process and research use were more complex than initially thought.

Policy decision-making has been described as 'messy', involving a long, complex process rather than a single, discrete event (Sabatier, 1999; Walt, 2007). Weiss used the term "decision accretion" [p381] to describe the gradual shaping of decisions over time (Weiss, 1980). This followed her discovery that many officials didn't feel that they made decisions themselves, so diffuse was the process, involving numerous actors rather than individual decision-makers. She conceptualised four factors that interacted and shaped policy: interests, ideologies, information and institutions (with research as just one form of information) (Weiss, 1999).

Different types of policy- or decision-making have been theorised, each with its own consequences for the potential influence of research. Black considered practice, service and governance policies, whilst Lomas described legislative, administrative and industry decision-making (Lomas, 1997; Black, 2001). Lindquist described a more generic conceptualisation, with routine, incremental and fundamental decisions having different receptivity to different types of information (Lindquist, 1988). The theory that policy decision-making happens in stages (rather than being a single, discrete event) has persisted within the literature, despite a growing understanding that these stages may not occur in a linear, sequential order (John, 1998; Hanney et al., 2002). The most commonly described stages relate to policy agenda setting, policy formulation and policy implementation.

Different characteristics of decision-making have been identified, each with its own implications for the extent and nature of research utilisation. Walt

highlighted that policy could be either formal or informal, explicit or implicit and ideological or non-ideological (Walt, 2007). Hanney et al. describe different types of research use depending on whether the decision-making is implicit or explicit, involving a real choice or merely supporting an existing decision and whether, if there is a choice, it is a technical or political decision (Hanney et al., 2002). Dobrow et al. discuss internal and external decision-making contexts. The internal context comprises the purpose of the decision-making, the participants involved and the actual process. The external context includes disease-specific, extra-jurisdictional and political factors (Dobrow et al., 2004). The internal context directly affects how and what evidence is used, whilst the external context shapes the barriers and facilitators of use (Dobrow et al., 2006).

What becomes clear from the literature is that there is not one single, clear-cut type of decision-making. How and what research is used will depend on the nature and context of the decision-making.

4.1.3 Types of research use

Alongside advances in understandings of decision-making have been similar developments in the appreciation of the complexity of research use. In her seminal work, Weiss theorised different ways in which research could be used, from more direct, rational uses to political, tactical and enlightenment models of use (Weiss, 1979). Political and tactical uses refer to the selective use of research to support existing decisions, rather than decisions being informed by research. Enlightenment is a more indirect way in which research informs decisions. It recognises that research is only one of the forms of information that decision-makers use. New research information merges with existing knowledge, thus having a slower, more subtle, cumulative influence (Weiss, 1980). Research helps to shape the 'policy terrain'; its influence often takes a long time and is frequently hard to observe (Weiss, 1986).

Rather than research use either happening or not, enlightenment suggests a slow, ongoing process. Beyer and Trice described utilisation as "a complex behavioral process" [p595] (Beyer and Trice, 1982). Although terminology varies, three main stages of research utilisation have been suggested: identifying, interpreting and applying research (Rich, 1997; Bowen and Zwi, 2005; Dobrow et al., 2006). It seems that, just as policy decision-making is rarely a single, discrete event, neither is research use.

It has also been suggested that different types of research may be of use at different stages of the policy process. For example, Lavis noted that different types of systematic reviews could inform different steps of policymaking, from defining a problem and assessing potential policy and programme options to identifying implementation considerations (Lavis, 2009).

In practice it is difficult to empirically measure instances of different types of research use. Methodological approaches generally focus on either tracing the impact of a particular piece of research, or analysing the process of and factors influencing a policy decision (Gerhardus et al., 2000; Hanney et al., 2002; Philpott et al., 2002; Lavis et al., 2003; Kuruvilla et al., 2006). For example, Philpott explored the unusual circumstances that led to the direct, instrumental use of findings from an HIV prevention study in Tanzania (Philpott et al., 2002). However there remain several challenges with such approaches. One problem is that it is difficult to objectively measure the influence of research. Methods of measuring research use often rely on interviews to gather data on perceptions of research use (Innvaer et al., 2002). However respondents may not be in a position to reflect objectively on all of the ways research was used. For example, given that numerous factors may have indirectly shaped a change in a decision-maker's beliefs which then affected their input into a policy decision, they may not be able to pinpoint whether they had indeed been 'enlightened' by a piece of research as opposed to some other form of evidence (Gilson and McIntyre, 2008). In addition, they may not view (or wish others to view) their research

use as political or tactical. Another challenge which follows on from this is that there may be a tendency for interviewees to focus on direct, instrumental use, given the relative ease with which it can be identified and measured. Black argued that this focus is particularly problematic for health services research, where much impact is through enlightening use rather than the direct uptake into policy (Black, 2009). There is also the risk that, in proving that a study was used instrumentally, the conclusion is reached that the decision-making was therefore 'evidence-based', regardless of whether or not other potentially relevant studies were also considered in a systematic and comprehensive manner. This distorts the basic premise of evidence-based decision-making. For these reasons, caution is necessary when attempting an empirical study of research use. The current study will not attempt to measure the actual use of research in decision-making, but rather *perceptions* of the use and usefulness of research (based on the assumption that research use is more likely to occur if the research is perceived to be useful).

4.1.4 Theories of research use

A key theory that has informed many models of (and implicit assumptions about) research use is the 'two communities' theory. This posits that the basic reason why research is not used is because researchers and decision-makers live in different worlds. They have poor understandings of each others' environment and limited opportunities for exchange and communication (Lomas, 1997). It follows that the solutions devised to encourage research use focus on overcoming these differences. They tend to emphasise the importance of the interface between researchers and decision-makers by targeting communication or interaction. It assumes that researchers are outside of the policy process and decision-making power is firmly held within the policy arena by a homogenous group of decision-makers (Gibson, 2003). The 'two communities' theory is the foundation for

many models of research use or 'knowledge translation', including Lomas' Linkage and Exchange philosophy, and Hanney et al.'s Interfaces and Receptors model (Lomas, 2000; Hanney et al., 2002).

Although more sophisticated than the rational decision-making model, the 'two communities' theory has also received criticism. Whilst few could deny the importance of dissemination and interaction between researchers and decision-makers, some have argued that this hypothesis leads to an ineffective focus. Gibson argues that, whilst 'two communities' may provide a useful *description*, it offers a weak *explanation* for the apparent lack of research use. This means that its solutions (which focus on strengthening the interaction and relationships between researchers and decision-makers) may be inadequate because they fail to tackle other influencing factors, such as competing interests and differing priorities (Gibson, 2003).

Moving away from the 'two communities' theory, in recent years the evidence-based movement has been increasing interested in the more dynamic and interactive concept of knowledge translation (although, as with other relatively new concepts, a variety of terms are used to encapsulate it) (Choi, 2005a; Estabrooks et al., 2006; Graham et al., 2006). Knowledge translation is a broad concept, encompassing both knowledge creation and its use in policy and practice (Canadian Institute of Health Research (CIHR), 2004). Its main focus is on the "active exchange of information between the researchers who create new knowledge and those who use it" [p4] (Canadian Institute of Health Research (CIHR), 2004). Although several definitions of knowledge translation do not focus specifically on information from scientific research, the term tends to be used with this (frequently) implicit focus nevertheless (Canadian Institute of Health Research (CIHR), 2004; Estabrooks et al., 2006; Pablos-Mendez and Shademani, 2006).

Choi, although not using the term knowledge translation but rather 'science-based policy', notes three main elements: knowledge generation, exchange and uptake (Choi, 2005a). Several articles have highlighted the need for knowledge generation to be relevant to research users, which could be

encouraged through the involvement of the research user in setting the research agenda setting as well as throughout research production process (Lomas, 2000; Philip et al., 2003; Lavis, 2006; Lehoux et al., 2008).

Knowledge synthesis, particularly through systematic reviews, is another element of knowledge generation which has received a great deal of attention within the knowledge translation field (Grimshaw et al., 200; Choi, 2005a; Tugwell et al., 2006). Systematic reviews aim to make it easier for research users to identify and understand the increasing quantity of research, as well as allowing users to have greater confidence in the results presented (Lavis et al., 2004; Bowen and Martens, 2005; Choi, 2005b).

Exchange (between researchers and potential research users), has become a well accepted factor associated with an increased likelihood of the uptake of research. A systematic review found that personal contact between researchers and potential research users was the most commonly cited facilitator of research use, whilst its absence was the most frequent barrier suggested (Innvaer et al., 2002).

More active and targeted means of dissemination, rather than simply publishing articles in peer-reviewed academic journals, are also encouraged in knowledge translation approaches (Philip et al., 2003; Lawrence, 2006).

Uptake is encouraged by ensuring that information is accessible and easy to understand and that there is a culture creating a demand for research use (Choi, 2005a).

One model describing the stages in the process of research use, has recently received more attention within the literature (Rich, 1997; Dobrow et al., 2004; Bowen and Zwi, 2005; Dobrow et al., 2006). It proposes three stages of research use (which overlap with Choi's elements of exchange and uptake): research introduction, interpretation and application.

In the first stage, introduction of research to the potential user may occur through user pull, producer push or exchange measures (Lavis et al.,

2003). User pull is where the potential user has actively sought out research (researchers may also actively facilitate user pull) (Lavis et al., 2006b). Producer push efforts, involve researchers disseminating their work. Exchange measures encourage partnerships between decision-makers and researchers (Lavis et al., 2003). The stakeholders involved, the process and purpose of decision-making all affect how research is introduced (e.g. availability of information, time available for searching, links with other stakeholders including researchers) (Adjei et al., 2001; Dobrow et al., 2004).

Once introduced, research is interpreted in the light of existing knowledge and the current policy situation or issue (Weiss, 1980; Dobrow et al., 2006). The decision-making contexts will affect how research is interpreted. The characteristics of participants includes their skills, experience and existing knowledge and beliefs (Bero and Jadad, 1997; Dobrow et al., 2004) . The purpose of the decision and the decision-making process will also be influential e.g. how thoroughly a report is read will be affected by the time available; whether the decision is popular may affect how critically research is assessed (Dobrow et al., 2006).

Application is the final 'stage', where, if used at all, research contributes to a decision (Dobrow et al., 2004). Application involves balancing *fidelity* to the research (e.g. to ensure effectiveness remains) with its *adaptation* to the new context (to increase its acceptability and feasibility) (Castro et al., 2004; Green and Glasgow, 2006; Rohrbach et al., 2006).

4.1.5 The importance of context

It is well recognised that context influences whether and how research may be used in decision-making (Dobrow et al., 2004; French, 2005a; Court and Cotterrell, 2006). For example, Dobrow et al. found that internal and external decision-making contexts affected how evidence was identified, interpreted and applied to policy recommendation decisions made by

different cancer screening expert groups in Canada (Dobrow et al., 2006). The literature on context and research use tends to focus on the decision-making context (French, 2005a; Court and Cotterrell, 2006). However Gilson and McIntyre also noted the importance of both the political context and the research context for research use in South Africa (Gilson and McIntyre, 2008). Further discussion about the research, internal and external decision-making contexts will be presented in the following chapter and the Ghanaian contexts will be described in chapter 3.

To summarise, understandings of decision-making and research utilisation within the evidence-based movement have advanced from fairly naïve, simplistic views of both the decision-making context (i.e. discrete and rational) and research use (i.e. direct, instrumental). Evidence-based decision-making is complex, with the context and nature of the decision-making process and the research itself affecting what and how research is used. The context of both research and decision-making is therefore important to consider when studying evidence-based decision-making.

4.2 Generalisability: external validity and local applicability/transferability

The theories described above focus on how research is used in policy decision-making; the theoretical literature is less advanced with regards to how decision-makers understand and interpret research. The current study focuses on one aspect of this latter area, local applicability/transferability. Several theoretical frameworks have been developed which attempt to set out the factors to be considered when assessing the local applicability/transferability of research. In the following section, the concept of local applicability/transferability will be located within the broader research context before discussing how the concept has developed over time. The existing theoretical frameworks that have been proposed will then be reviewed.

4.2.1 External validity

The evidence hierarchy promoted by the evidence-based movement focuses particularly on internal validity. Internal validity refers to the extent to which differences observed in an evaluation can be causally attributed to the intervention (Eldridge et al., 2008). A study's design and methods affect its internal validity; RCTs are considered the 'gold standard' because of their ability to minimise threats to internal validity (Persaud and Mamdani, 2006). Internal validity was often juxtaposed with external validity; they were frequently considered to be mutually exclusive. External validity refers to the generalisability of findings to other populations and settings (Ferguson, 2004). As the evidence-based movement has matured and expanded beyond medicine, so critics have begun to highlight the importance of external validity and its relative neglect by those advocating an evidence-based approach (Glasgow et al., 2006b; Green and Glasgow, 2006). There has been a push for a new emphasis on external validity, in terms of both the design and reporting of studies (Glasgow et al., 2006b). In 2006 a group of health journal editors met to discuss the importance and neglect of external validity. They generally agreed that there was a need to improve its reporting and several editorials followed, highlighting the issue (Glasgow et al., 2006a; Patrick et al., 2008; Rao, 2008; Steckler and McLeroy, 2008).

Those arguing for a renewed emphasis on external validity purport that its neglect is one of the contributors to the lack of research use in policy and practice (Glasgow et al., 2004; Green and Glasgow, 2006; Currow et al., 2009). Two main benefits of increased attention to external validity have been suggested. If threats to external validity are minimised (and data is provided on external validity issues), it is expected that decision-makers will find research more useful and so will use research more (Glasgow et al., 2006b; Green and Glasgow, 2006). A secondary benefit is that, by highlighting deficits in the conduct and reporting of external validity, the quality of the evidence base may be improved (Glasgow et al., 2006b).

A range of ways of enhancing external validity have been proposed, from improving the reporting of studies and including contextual information to using different study designs and analysis methods. Improved reporting often refers particularly to information about the study sample and the selection of participants (O'Connell et al., 2001; Slack and Braugalis, 2001; Ferguson, 2004; Flay et al., 2005; Green and Glasgow, 2006; Rothwell, 2006). Alternative study designs promoted include the use of practical clinical trials and the incorporation of process evaluations into studies of effectiveness (Bonell et al., 2006; Green and Glasgow, 2006; Glasgow, 2008). Subgroup analysis is recommended as a means of examining whether different effects are observed between subgroups, or with different intervention doses (Flay et al., 2005). Those advocating increased reporting of contextual information tend to refer specifically to information about the setting in which the intervention was delivered (Gruen et al., 2005; Glasgow and Emmons, 2007).

The CONSORT, TREND and STROBE statements aim to improve the reporting of randomised and non-randomised evaluations and non-intervention studies respectively. All include generalisability as one of their criteria (Moher et al., 2001; Des Jarlais et al., 2004a; Vandenbroucke et al., 2007). Whilst there has been criticism that only one criterion relates explicitly to generalisability, several other criteria do refer to the sample and recruitment strategies (Glasgow et al., 2003). Both CONSORT and TREND include the reporting of the intervention content and the TREND statement also covers issues of implementation (these aren't relevant for STROBE, since it focuses on non-intervention studies). However the statements have been criticised for not going far enough in terms of external validity and the reporting of contextual information required (Dzewaltowski et al., 2004b; Glasgow et al., 2006b). A more pragmatic criticism of the statements is their lack of information about *how* to report on generalisability (Des Jarlais et al., 2004a; Bonell et al., 2006).

The RE-AIM framework, devised by Glasgow and colleagues, aims to examine intervention effects in their broadest sense and is arguably the most prolific external validity assessment tool in the literature (Glasgow et al., 1999; Bull et al., 2003; Glasgow et al., 2003; Dzewaltowski et al., 2004a; Glasgow et al., 2004; Green and Glasgow, 2006). Incorporating both internal and external validity, the five elements within the framework are:

- Reach and representativeness (referring to the sample size and characteristics)
- Efficacy or effectiveness (i.e. study impact)
- Adoption (referring to the number and representativeness of those providers/settings willing to deliver the intervention)
- Implementation (i.e. consistency of delivery, or adherence of providers to the intervention)
- Maintenance (of effects over time and the institutionalisation of the intervention).

Numerous reviews of the health promotion literature have been conducted, assessing the reporting of intervention evaluations according to these five elements. Generally, reporting of external validity is considered to be poor (Bull et al., 2003; Dzewaltowski et al., 2004a; Klesges et al., 2008).

The most obvious criticism of this push for more attention to external validity is that it is implicitly grounded in the naïve and simplistic models that were inherent in the early days of the evidence-based movement. Often lamenting the 'failure' of translating research into practice, it remains implicitly beholden to direct, instrumental research use and clear, discrete decision-making 'events'. Whilst other areas within the evidence-based movement have recognised that methodological and reporting issues alone won't be sufficient to encourage research use, those in the field of external

validity continue to emphasise these very issues. For example, several authors promoting the RE-AIM framework suggest that attention to external validity, primarily through enhanced reporting of intervention evaluations, is a key means of increasing the translation of research into practice (Bull et al., 2003; Estabrooks and Gyurcsik, 2003; Glasgow et al., 2003; Glasgow et al., 2004).

Furthermore, the proponents of generalisability appear to continue to assume that the more research use there is the better, even though the very concept itself specifies that research in one setting may *or may not* be relevant to other settings. It could be argued that it would be more logical to advocate for *appropriate* research use, since inappropriate use of research in settings which the findings cannot be generalised to, can be at best ineffective (and so wasteful of resources) and at worst, harmful. This is arguably as important as the non-use of appropriate research. In emphasising the need for *appropriate* research use, rather than just *more* research use, the importance of assessments of local applicability/transferability rises to the fore.

Glasgow et al. do touch upon this issue in passing, as they highlight what they consider to be different types of generalisability for different decision-makers (Glasgow and Emmons, 2007). They posit that local decision-makers ask whether the research findings will fit their specific situation, whilst national policy decision-makers are more concerned about the range of contexts across which the research findings can be applied. However they maintain that the same, study-focused information is required for both types of query (i.e. as opposed to information on the decision context). This difference between generic and specific generalisability is a crucial one that requires further unpacking.

4.2.2 Defining local applicability/transferability

External validity is a generic concept - the potential for a study's findings to be generalised to another sample or setting (Ferguson, 2004). However it seems logical that decision-makers would be more concerned with a study's applicability/transferability to their own specific population or setting. Whilst external validity provides information to inform generic assessments of a study findings' potential utility to other settings, specific assessments are informed by judgements about local applicability/transferability. To clarify, the conceptual difference is between an assessment of the study findings to a *generic* or to a *specific* other setting. Given their specificity, it could be argued that local applicability/transferability are even more crucial to the area of research use than the concept of external validity.

Terminology and meanings vary widely in this literature. For the purpose of this study, Wang et al.'s definitions of applicability and transferability will be used, since it presents the most detailed and specific definitions identified in the literature (Wang et al., 2006). They considered applicability to refer to whether an intervention could be implemented in the new setting, whilst transferability refers to whether it would be as effective in the new setting as it was in the original study setting. Despite the clear conceptual distinctions presented here, much of the literature does not distinguish between the two. In order to preserve the notion of two separate concepts, whilst recognising that in reality there is rarely such a clear differentiation, the phrase 'local applicability/transferability' will be used to refer to this setting-specific concept.

4.2.3 Assessing local applicability/transferability

There has been some recognition of the importance of assessments of local applicability/transferability and the need to provide information to inform such assessments. A systematic review of studies exploring policy-makers' perceptions of factors affecting their use of evidence found that

'timeliness and relevance of the research' (or lack of) were in the top two most commonly mentioned facilitators and barriers to research use (Innvaer et al., 2002). As is often the case, no explanation of the meaning of 'relevance' was provided; it is unclear how many specifically mentioned the need for research to be locally applicable/transferable. Dobbins et al. found that the applicability of research was particularly important to Canadian health decision-makers (Dobbins et al., 2004a). Another Canadian study, of health care managers and policy-makers, found that they were more concerned about local applicability than research quality (Lavis et al., 2005). Many others have highlighted the need to adapt, tailor or 'individualise' interventions and programmes to ensure their context-sensitivity in decision-makers' own settings (Castro et al., 2004; Bryce et al., 2005; Cuijpers et al., 2005; Schunemann et al., 2006).

There are two aspects to consider in terms of local applicability/transferability assessments. The first is the dimensions and factors within local applicability/transferability, that is, the types of information that are required or desired by potential research users, in order to assess its potential applicability/transferability to their setting. The second is how such assessments are (or should be) carried out.

Dealing with the latter first, some have suggested that the assessment of local applicability/transferability should be more systematic and explicit (Lavis et al., 2004; Gruen et al., 2005; Dobrow et al., 2006; Schunemann et al., 2006). This reflects an understanding that such assessments are generally implicit and it is therefore unclear how exactly they are made. Given its importance to decision-makers, it is remarkable how little attention has been paid to understanding such assessments, particularly in comparison to the effort and debate around the quality of research:

> "While assessment of evidentiary quality faces many challenges, in terms of sophistication it is light years ahead of our ability to assess generalizability of evidence." P1820 (Dobrow et al., 2006)

There have been some suggestions of how to go about assessing local applicability/transferability. Wang et al. suggested two alternative methods of assessment, either using expert groups or reviewing the literature (Wang et al., 2006). Gruen et al. suggested that contextual information could either be intrinsically incorporated within a systematic review, or such information could be extrinsic, with reviewers offering guidance for the application of findings (Gruen et al., 2005). Lavis et al. also consider ways to either incorporate local information into systematic reviews, as 'systematic reviews plus', or to adapt the 'global stock' of reviews for local settings (Lavis et al., 2005). Deliberative processes are another means of incorporating local information with research evidence to assess its applicability for a particular decision through explicit procedures (Lomas et al., 2005).

Local applicability/transferability assessments could take place at either the introduction or interpretation stages of the research use process. Those incorporating contextual information within reviews, suggest that local applicability/transferability can be assessed when the review is introduced to decision-makers. The remaining approaches assume that assessments will take place at the time of the decision. Both have implications: where decision-making is implicit or gradual, it is more likely that assessments occur at the time that the research is introduced to decision-makers. Only in situations where there is clear, discrete decision-making (which, as discussed above, is rarely the case) can such assessments be made explicitly at the time of the decision. Although there have been calls for testing such approaches, there has yet to be any published findings describing the process or perceived usefulness of these methods (Lavis et al., 2005).

4.2.4 Theoretical frameworks of local applicability/transferability

There have been some attempts to understand the dimensions and factors that may be considered within local applicability/transferability assessments. Lavis et al. identified three key dimensions that health managers and policy-makers mentioned with regard to local applicability: applicable studies were set in similar environments, with similar ethno-cultural/demographic groups and were contemporaneous (Lavis et al., 2005). Gruen et al. proposed five elements: the relative importance of the health problem, the relevance of the outcome measures and the practicality, appropriateness and cost-effectiveness of the intervention (Gruen et al., 2005). Bonell et al. conceptualised two key issues: whether the intervention can be delivered elsewhere (including feasibility, coverage and acceptability) and whether it meets recipients' needs (Bonell et al., 2006). Rychetnik et al. suggested that information on the intervention, the evaluation context and interactions between the two are needed in order to assess whether the findings are transferable (Rychetnik et al., 2002). Wang et al. have developed arguably the most detailed descriptions of applicability/transferability, detailing seven dimensions of applicability and three of transferability (Wang et al., 2006). These will be discussed in greater detail in the following chapter.

It is particularly striking that, apart from Lavis et al.'s article, the dimensions suggested above have not been developed based on data regarding what decision-makers perceive to be important for local applicability/transferability assessments.

To summarise, whilst there has been substantial progress in other areas of the evidence-based movement, there has been little advancement with regard to understanding local applicability/transferability. Much of the literature remains implicitly grounded in the more naïve and simplistic models that limited the early days of the evidence-based movement's perceptions of research use. The focus on external validity remains firmly centred on methodological and study reporting issues. In recent years there

have been calls for attention to be paid to the issue of local applicability/transferability. Attempts have been made to identify ways of conducting assessments more systematically and to hypothesise which dimensions are important for assessment. However there is a clear a lack of empirical data exploring which factors decision-makers feel are important to consider when assessing the local applicability/transferability of research for their setting. It is also unclear whether researchers' tendency to focus on methods results in different perceptions of the key dimensions of local applicability/transferability (compared to decision-makers). This could have implications for the contextual data collected and reported in studies. This study sets out to explore these gaps in our understanding.

4.3 The evidence-based movement in low income countries

Just as the evidence-based movement expanded from medicine to public health and other areas, so there have been calls for its expansion from high income countries to low (Siddiqi and Newell, 2005; The Bamako Call to Action: Research for health," 2008). It has been suggested that the need for evidence-based approaches in low income countries is even greater than in high income settings. The limited resources available in low income countries mean that money wasted on ineffective interventions, or spent on treatments required as a result of harmful interventions, is of greater consequence (Chinnock et al., 2005; Santesso and Tugwell, 2006). Nevertheless, it should be noted that the evidence-based movement started in high income countries and as such it has been argued that it reflects 'western' positivist paradigms, representing and seeking to empirically measure an absolute 'truth' (McQueen, 2002; Holmes et al., 2006).

The seminal COHRED report, 'Health Research: Essential Link to Equity in Development', published in 1990 called for recognition of the importance of research for health in low income countries (COHRED, 1990). In the late 1990s, an awareness of the 'lack' of research use in low income countries

led to a realisation of the need to encourage the use of evidence-based approaches (Garner et al., 1998; Dans and Dans, 2000). Following the pattern seen in high income countries, initially medicine was the central focus of the movement's spread into low income countries, with public health following later.

Those attempting to use or advocate for an evidence-based approach in low income settings often noticed differences, particularly additional constraints, compared to high income settings. There are various reasons why the challenges of evidence-based decision-making differ in low income countries compared to high income countries. These can broadly be described as differences in decision-making contexts and processes, differences in research supply and differences in strategies to encourage evidence-based decision-making.

4.3.1 Differences in the decision-making context in low income countries

The general political environment affects the likelihood of research utilisation by affecting the policy-making process and culture, as well as research production. Political systems in low income countries may vary in the extent to which they are open, democratic, stable or corrupt (Young, 2005; Court and Young, 2006; Santesso and Tugwell, 2006). This will affect who is involved in the policy process and the degree of power and influence that different stakeholders exert.

An important difference in policy processes in low income settings is the role of external policy stakeholders. Donors and other external actors often have strong policy influence and can affect what and how research is utilised (Court and Cotterrell, 2006; Livny et al., 2006). For example, a case study of malaria control policy-making in three southern African countries found that donors and international organisations exerted substantial influence in the decision between bednets and indoor spraying for malaria control, by funding insecticide-treated bednet programmes (Woelk et al.,

2009). Although often playing a smaller role than in many high income countries, other actors, such as the media, non-governmental organisations (NGOs) and the private sector are gaining influence and involvement in policy processes in many low income countries (Court and Young, 2006).

Another important issue is the capacity of decision-makers to access, interpret and utilise research (Adjei et al., 2001; Bennett et al., 2007). This can be particularly problematic where there is high staff turnover due to either political instability or more general staff retention issues, they may also face basic problems of access to research, for example due to poor internet infrastructure (Bennett et al., 2007). Gilson and McIntyre noted the difficulties faced by new government decision-makers in South Africa, for whom research was viewed as a luxury when confronted with the challenges of bringing about policy change (Gilson and McIntyre, 2008).

General attitudes towards research utilisation have also been highlighted as a barrier in many low income countries (Lavis, 2007). Where there is no history of using research in policy and planning decisions, there may be a lack of demand for research (Adjei et al., 2001). Decision-makers may find there is little or no incentive to use research, in addition to practical (often resource-related) constraints which may inhibit use (Court and Young, 2006; Santesso and Tugwell, 2006).

4.3.2 Differences in research supply in low income countries

As well as differences in the way decisions may be made in low income countries, there are also differences in the research that is produced and available there. Two major challenges are the insufficient amount of research conducted in low income countries and the relevance of the available research to decision-makers' problems (Young, 2005; Livny et al., 2006).

The lack of sufficient research is due mainly to scarce funding, although lack of research capacity has also been noted to be a problem (Global

Health Watch, 2005; Young, 2005). The Global Forum for Health Research has been monitoring health research funding for a decade. Despite the increased focus on the importance of funding health research in low income countries, most funding for health research comes from high income countries and remains targeted towards their own situations (Burke and Monot, 2008).

As mentioned above, the capacity of low income countries to conduct health research has also been questioned. Lack of investment in education, low salaries, unappealing career pathways and job offers from international and high income country institutions have combined to make the recruitment and retention of health researchers in low income countries' institutions problematic (Whitworth et al., 2008). Other capacity constraints include a lack of infrastructure, such as computers and internet access, as well as inadequate access to research tools and methods (e.g. software for analysis) (Rannan-Eliya, 2007). Whilst some suggest that research collaborations between high and low income countries can resolve some of these issues, others point out the risk of 'colonialism', with such collaborations following high income countries' research agendas, rather than addressing the questions that low income country decision-maker may prioritise (Volmink and Dare, 2005).

In their 1990 report, COHRED argued for a distinction between 'global' health research, which generates knowledge and technologies for the control and prevention of ill health, and 'country-specific', essential national health research, which addresses issues of health and disease profiles, health system planning and policy issues (COHRED, 1990). Whilst global health research was considered to be based on generally uniform characteristics and so was fairly transferable between countries, 'country-specific' research was felt to have limited use beyond its original setting. Although in an ideal world every country would have the resources to conduct all the essential national health research that it needed, in reality this will never be possible. Whilst this distinction is useful for the purpose of

advocating for more funds for 'country-specific' research, it does little to assist those aiming to encourage evidence-based decision-making now, since in-country research is invariably lacking. Whilst much public health research is context-specific, this does not automatically mean that no lessons can be drawn by countries other than the one in which a study was conducted. It is at this point that the importance of understanding local applicability/transferability comes to prominence.

4.3.3 Strategies to encourage research use in decision-making in low income countries

Poor dissemination of and lack of access to research have been highlighted as further barriers to research use in low income countries (Adjei et al., 2001; Haines et al., 2004; Livny et al., 2006). Although ongoing interactions between researchers and decision-makers have been recommended, some have recognised that resource and capacity constraints can limit the establishment and functioning of these communication channels (Livny et al., 2006; Bennett et al., 2007). Such long-term involvement may be more difficult between low income country decision-makers and researchers from other (often high income) countries, which may further inhibit the potential utility and use of such studies.

Some believe that the strategies used in high income countries to encourage research utilisation are inappropriate for low income settings, due to differences in the decision-making and research contexts. Their effectiveness in, as well as their applicability/transferability to, low income countries are unknown (Siddiqi and Newell, 2005; Court and Young, 2006). In recent years there have been numerous initiatives and activities that attempt to encourage research use in decision-making in low income countries, for example by developing research capacity, increasing the supply of and access to research, or by formalising and encouraging interactions between researchers and decision-makers (Hamid et al., 2005;

McMichael et al., 2005). However although some of these initiatives and activities have been reported and described in publications, few appear to be have been evaluated. Hopefully with time, the development of tools and frameworks for such evaluations will lead to greater understandings of which strategies are effective and the factors affecting their impact (Lavis et al., 2006b; Lavis, 2007).

4.3.4 The importance of local applicability/transferability for low income countries

There appears to be greater awareness of the importance of the local applicability/transferability of research among those concerned with evidence-informed decision-making in low income countries, compared to their high income counterparts (Court and Young, 2006; Santesso and Tugwell, 2006). This may well be due to their greater reliance on research conducted in other countries, or on global guidelines and recommendations (Bennett et al., 2007). This concern for local applicability/transferability leads to two divergent foci. Whilst advocate for the need for research production in-country, to ensure its appropriateness and feasibility, others recognise the need to contextualise and tailor research findings and guidelines from elsewhere (COHRED, 1990; McMichael et al., 2005; Siddiqi and Newell, 2005; Court and Young, 2006).

4.3.5 Own-country research relevance

Even when research is conducted in a country, it may still not be perceived as relevant by decision-makers (Lavis, 2007). In 1990, COHRED called on low and middle income countries to spend two percent of their health budgets on essential national health research (COHRED, 1990). Although this call has been repeated (and committed to by health ministers, most recently at the Bamako forum in 2008), almost all countries appear to have

failed to reach this target (Burke and Monot, 2006; The Bamako Call to Action: Research for health," 2008). At a basic level, this means that health decision-makers are unable to commission research on topics that they feel are useful. Most research conducted in low income countries is funded by international agencies and other external donors (Global Health Watch, 2005; Bennett et al., 2008a). As these organisations may have different goals and priorities to national decision-makers, for example advancing the global health research agenda or their own topic of interest, the research they fund may be of little interest to those from the country in which it is conducted (Ali et al., 2006). Research funding often mirrors external agencies' focus on vertical disease programmes, resulting in disease-specific studies forming a fragmented, disjointed national health research base (Global Health Watch, 2005; Kennedy and Ijsselmuiden, 2008). Some changes to research funding have been noted, as a result of changes to, or the introduction of, international and donor agencies (De Savigny, 2007). However little attention appears to have been paid to whether and how the funding and agenda setting of national health research has been affected by changes in donor aid (for example by the introduction of sector-wide approaches).

There has been a push for low income countries to develop their own explicit research agendas (Nuyens, 2007). These aim to be more rational and consultative agenda setting processes (some would also argue 'evidence-based') and tools have been developed for this purpose (The Working Group on Priority Setting, 2000; Nuyens, 2007). Such explicit policies and agendas also attempt to shift the locus of control from external funders to national decision-makers and other internal stakeholders. However the extent to which countries have created national agendas and the impact such strategies have had on the research conducted (and its perceived usefulness) is varied and often remains unclear (Figueroa et al., 2002; Ali et al., 2006). Despite these developments, national decision-makers are still frequently considered the 'weaker voice' when it comes to

setting research priorities, whilst donors and international agencies (i.e. research funders) often remain highly influential (Global Health Watch, 2005; De Savigny, 2007; Kennedy and Ijsselmuiden, 2008).

To summarise, there has been a relative lack of attention paid to understanding research use and its challenges in low income settings, at least until recent years. However it is clear that evidence-based decision-making in low income countries faces additional constraints. An exploration of the concept of local applicability/transferability would therefore be particularly pertinent to low income countries.

4.4 Evidence-based maternal health

The risk of maternal mortality and morbidity remains high in low income countries (AbouZahr and Wardlaw, 2004). Little progress has been seen in most low income countries over the last two decades and many have voiced frustration at the persistent and widening health gap between rich and poor (Donnay, 2000; Freedman et al., 2003; Schneid-Kofman and Sheiner, 2008). A range of explanations for this lack of progress have been offered, including a lack of political commitment, a lack of funding and a lack of consensus among stakeholders (AbouZahr, 2003; Shiffman and Smith, 2007; Greco et al., 2008).

Public and political awareness of the importance of maternal health grew in the 1980s with the launch of the Safe Motherhood Initiative (AbouZahr, 2003). The seminal paper by Rosenfield and Maine, published in 1985, highlighted the neglect of maternal health within the broader concept of maternal and child health (Rosenfield and Maine, 1985). In 1994, a framework detailing 'three delays' which lead from the onset of obstetric complications to maternal death was published, giving the field a clear model on which many future interventions and studies were based (Thaddeus and Maine, 1994).

It has been noted that previous international strategies were not evidence-based, but rather were 'good ideas' (Miller et al., 2003; Tita et al., 2007). For example, training traditional birth attendants (TBAs) and focusing on risk assessment during pregnancy were two major international policies that did not appear to reduce maternal mortality (Miller et al., 2003).

Current strategies for improving maternal health focus on emergency obstetric care and skilled birth attendance (Starrs, 2006). It has been argued that these are also 'good ideas', rather than evidence-based policies, since there has been little evidence of their effectiveness through rigorous studies (Miller et al., 2003). Although there have been calls to make maternal health more evidence-based, there are a number of reasons why there appears to be less use of evidence-based approaches in this field compared to others (Miller et al., 2003; Tita et al., 2007).

The nature of maternal health is such that other factors are likely to have a greater influence on decision-making than research. Firmly embedded within societies' cultural and moral fabric, maternal health is a highly political topic, invoking strong beliefs and attitudes (Buse et al., 2006). As such, interests, beliefs and values may play a stronger role in influencing decisions, to the extent that research evidence may be ignored or contradicted in decisions (as has been noted in other areas of reproductive health) (Reichenbach, 2002).

The nature of the research evidence base also inhibits its use in decision-making. Although it is generally accepted that there is good evidence for 'what works' for maternal health at a clinical level, there is a dearth of evidence of the effectiveness of public health interventions and strategies (Braine, 2005; Campbell, 2006; Burchett and Mayhew, 2009a). The first most basic problem is the lack of studies conducted (Luck, 2000). Those that are conducted are of variable quality and very few use an RCT design (Burchett and Mayhew, 2009a). In general, maternal health has not taken on board the recent methodological developments in evaluating large complex evaluations, although a small number of examples do exist

(Manandhar et al., 2004; Penn-Kekana et al., 2007; Burchett and Mayhew, 2009a). Although there have been attempts to develop common sets of process indicators in some areas of maternal health (e.g. emergency obstetric care and abortion services), a wide range of outcome measures continue to be used in many areas, making comparison of interventions' effectiveness difficult (Graham et al., 1996; UNICEF/WHO/UNFPA, 1997; Healy et al., 2006). Non-clinical maternal health interventions tend to be complex, multi-component and highly context-sensitive. The arguments around the appropriateness, feasibility and 'risks' of applying the evidence hierarchy to maternal health mirror those in the broader public health literature (Behague and Storeng, 2008). The importance of context to the implementation and success of interventions means that study results often vary widely between settings and their applicability/transferability to other settings is easily questioned. These factors make the evidence base difficult to understand. Its complexity and the lack of consensus regarding what the research findings 'mean' makes the evidence base highly contestable. As discussed earlier, such complexity and lack of clarity can make it less likely that research will be 'used'.

A recent review of published (English language) intervention evaluations found that most low income countries lacked even one evaluation of a non-clinical intervention that aimed to reduce maternal mortality (Burchett and Mayhew, 2009a). It follows that if decision-makers were to use maternal health effectiveness research, they would have to look to evaluations conducted in other countries. However as mentioned above, interventions tend to be context-specific and as such, their applicability/transferability to other settings can be questioned. Although some argue that it is not possible to use such findings from elsewhere, it is well recognised that some potential utility from such studies should be sought. Penn-Kekana believes evaluations from elsewhere can be used as a starting point (as opposed to an 'end point') (Penn-Kekana et al., 2007). The need to tailor or adapt maternal health interventions for local settings, or to identify

components within programmes evaluated elsewhere that can be included in locally-specific implementation plans has been recognised (Penn-Kekana et al., 2007; Tita et al., 2007).

Therefore maternal health is an area which exhibits classic 'public health' characteristics. Interventions tend to be complex, multi-component and large scale. Maternal health policies and programmes are often highly context-specific. The evidence base is insufficient and contestable. There is a dearth of good quality research into the effectiveness of interventions, such that if decision-makers were to utilise such evidence, it would likely be from another country. Decision-makers have many factors influencing their decisions, other than research evidence. Therefore maternal health is an area where a better understanding of researchers' and decision-makers' perceptions of local applicability/transferability could be very beneficial. In addition, an exploration of the factors affecting the relevance of own-country research, and whether or how these may have changed in recent years, could be of use.

Chapter 2:
Conceptual Framework, Aim and Methods

1. Introduction

This chapter presents the rationale, conceptual framework, aims, objectives and methods used in this study. The rationale describes the reasons for conducting the study. The conceptual framework sets out the theories underpinning the study's aims and methods. The methods used to collect and analyse data will then be detailed. Data were obtained through semi-structured interviews. These were conducted mainly in Ghana with policy decision-makers, Ghana Health Service staff at national and sub-national levels, other maternal health policy stakeholders and maternal health researchers. The overall research strategy and justification of methods used will be discussed, before the sampling strategy is explained. The data collection techniques, ethical considerations and methods of analysis will then be presented. Finally, the limitations of the study and reflections of the researcher will be discussed.

2. Rationale

Local applicability/transferability is an essential consideration for those using, or attempting to encourage the use of, research in policy and practice. However this issue has not been considered extensively in the literature. Whilst the evidence-based movement seeks to encourage more research use, it implicitly neglects to appreciate that *inappropriate* research use may be as wasteful of resources, or potentially harmful, as the non-use of appropriate research. By focusing on effectiveness research, the movement fails to consider the other types of research and research producers that decision-makers may find useful. This study addresses this 'attention imbalance' by exploring these factors in relation to maternal health in Ghana.

2.1 Ghana as the country example

Ghana is a low income country located in West Africa (see table 1 for country-level indicators). By focusing on Ghana this study will explore some of the challenges that may be unique, or at least more pronounced, in low income settings as compared to high income countries. Ghana was also selected as an example of a country where there have not already been initiatives and programmes to encourage research use (such as EVIPnet) (Hamid et al., 2005). Whilst such initiatives may change beliefs and attitudes towards research (e.g. the usefulness of research for decision-making, or the types of research useful), they may also increase the likelihood of acquiescence bias. This is a particular concern since the investigator was from a high income country (and so may be associated with the evidence-based movement). By collecting data in a country which has not participated in any formal programmes or schemes to encourage research use, or evidence-based decision-making, it was hoped that the risk of this particular bias was lowered.

Table 1: Country-level indicators for Ghana

Indicators[1]	
Total population	23,478,000
Population living in urban areas (%)	49
Gross national income per capita (PPP international $)	1,330
Life expectancy at birth (years) Female Male	 58 56
Total fertility rate[2]	4.0
Pregnancy-related mortality ratio (per 100,000 live births)[3]	580
Under-5 mortality rate (per 1000 live births)	115

2.2 Maternal health as the topic focus

Maternal health was selected as the topic focus because it is a 'classic' example of a complex and context-sensitive public health issue which has observed little progress in recent decades. Not only would it provide an excellent topic through which to explore the issue of local applicability/transferability, the maternal health field would also be likely to benefit greatly from improved understandings of the issue. In particular, the study focused on the issue of public health research (including health promotion, health policy and health services research).

[1] Taken from the World Health Organization's Global Health Observatory 2007 data, unless otherwise stated (World Health Organization, 2010)
[2] 2008 data (Ghana Statistical Service et al., 2009)
[3] 2007 data (Ghana Statistical Service (GSS) et al., 2009)

2.3 Implications of this study

It is hoped that this study will provide findings of use to a range of stakeholders. Firstly, greater understanding of the types of information decision-makers would like in order to assess a study's local applicability/transferability would allow researchers to collect and report these types of data. Secondly, it would highlight how issues of research funding, agenda setting and other research production issues are linked to perceptions of research relevance. This would have implications for those funding and commissioning research at both national and international levels. Thirdly, it would provide Ghanaian researchers and decision-makers with a greater understanding of their own research production and decision-making contexts. Finally, it would assist in advancing the notion of appropriate research use in decision-making at a global level (as opposed to the frequent focus on encouraging 'more' research use).

By using empirical data to explore a somewhat implicit aspect of the research utilisation process, it will further our understanding of the factors that may affect the degree of influence that research exerts on decisions. The current study will not investigate which factors actually do affect local applicability/transferability in an objective sense, but rather will explore perceptions of these factors. However only by developing a more explicit understanding of these perceptions is it then be possible to debate whether they reflect the areas that *should* be focused on.

3. Conceptual Framework

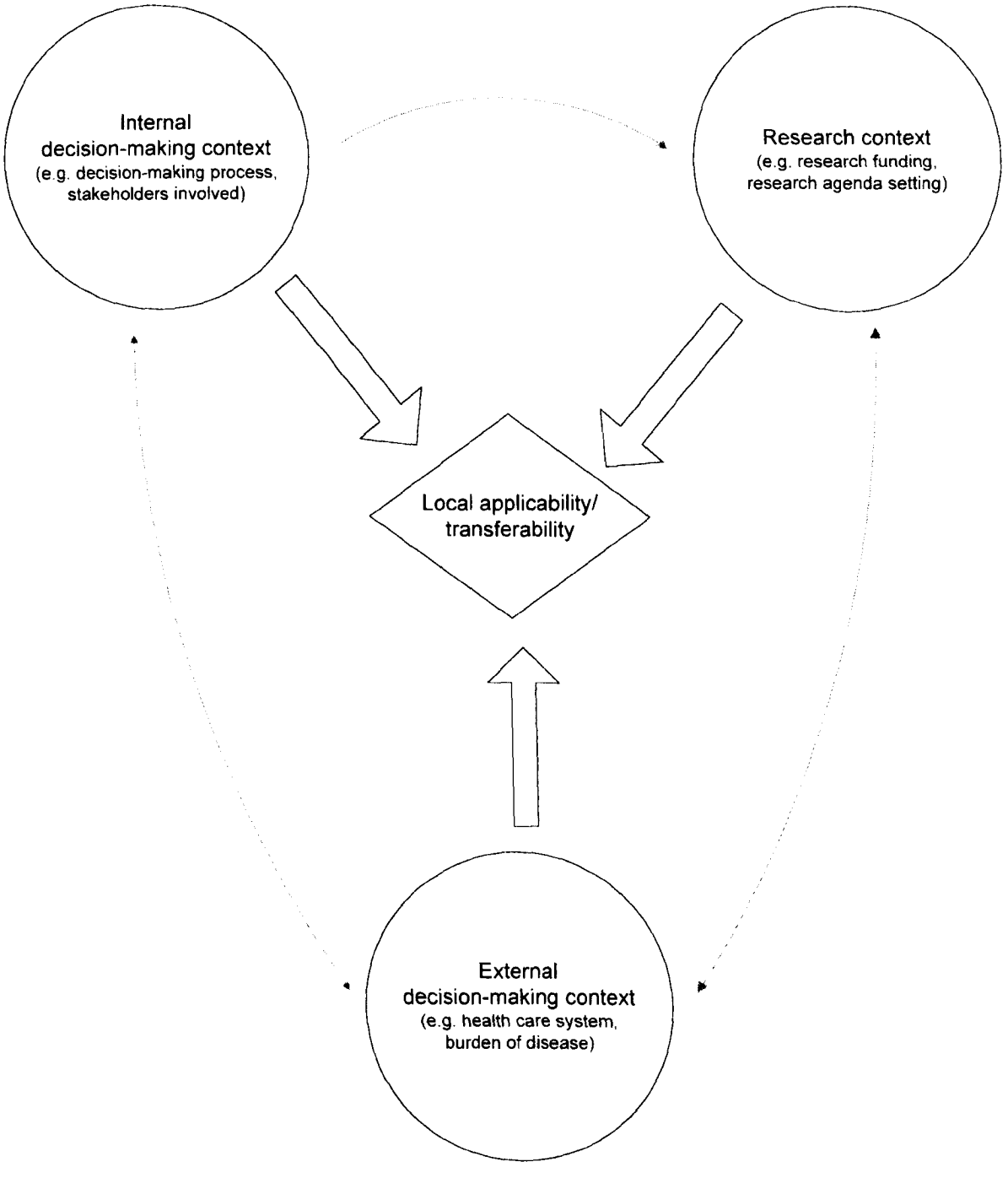
Wang et al.'s theoretical framework forms the core of this study's conceptual framework (Wang et al., 2006). As mentioned in the previous chapter, this is arguably the most comprehensive frameworks of local applicability/transferability. They distinguish between applicability, relating to the likelihood that it could be implemented in the new setting and transferability, referring to the likelihood that the effects observed in the original study setting would be replicated in the new setting. They set out a number of dimensions of applicability and transferability, as summarised in table 2.

Political environment	Does the political environment of the local society allow this inte to be implemented? Is there any political barrier to implementing this intervention?
Social acceptability	Would the general public and the targeted (sub)population acce intervention? Does any aspect of the intervention go against local social norm Is it ethically acceptable?
Cultural adaptability	Can the contents of the intervention be tailored to suit the local c
Resource implications	Are the essential resources for implementing this intervention av in the local setting?
Educational level of target population	Does the target population in the local setting have a sufficient educational level to comprehend the contents of the intervention
Organisational structure and skills of local interventionists	Which organisation will be responsible for the provision of this intervention in the local setting? Is there any possible barrier to implementing this intervention du structure of that organisation? Does the provider of the intervention in the local setting have the to deliver this intervention? If not, will training be available?

lity	The characteristics of the target population	Are the characteristics of the target population comparable betv study setting and the local setting? With regard to the particular aspects that will be addressed in tl intervention, is it possible that the characteristics of the target population, such as ethnicity, socioeconomic status, educationa etc will have an impact on the effectiveness of the intervention?
	The capacity to implement the intervention	Is the capacity to implement the intervention comparable betwe study setting and the local setting in such matters as political environment, social acceptability, resources, organisational stru and the skills of the local providers?

The broader conceptual framework shown in figure 1 presents the contexts in which local applicability/transferability assessments are made: the internal and external decision-making contexts and the research context (Dobrow et al., 2004). These interact with each other and so may directly or indirectly affect perceptions of the local applicability/transferability of a piece of research.

Figure 1: Factors influencing perceived local applicability/transferability



3.1 The internal decision-making context

The internal decision-making context is made up of a number of factors. These include the type of decision to be made (for example whether it is a technical or political decision), the decision-making process (e.g. whether explicit or implicit; involving set procedures or autocratic directives) (Hanney et al., 2002; Dobrow et al., 2006). The number and type of stakeholders involved, including their relative power and their perceptions of the value of research for decision-making will all help to shape perceptions of the local applicability/transferability of research studies (Walt, 2007).

3.2 The research context

The research context incorporates factors affecting research production, as well as the broader evidence base within which research studies are located. Research production factors include the research agenda (and particularly, who is involved in setting it and how it is set), research funding (which is strongly associated with agenda setting) and the research production process, particularly the extent to which decision-makers are involved and the nature of dissemination efforts (Livny et al., 2006). The broader research context refers to the extent to which the research contradicts or confirms existing knowledge and understanding of the problem or situation.

3.3 The external decision-making context

The external decision-making context includes situational factors (e.g. demographics and other population characteristics, the general political environment and the health care system) as well as factors that may affect the implementation and effectiveness of the study's findings or

recommendations (e.g. provider capacity, resource constraints, acceptability) (French, 2005a; Court and Cotterrell, 2006; Gilson et al., 2008). International influence may also have an effect the decision-making process and perceptions of the value of research (Walt, 2007).

3.4 Interactions between contexts

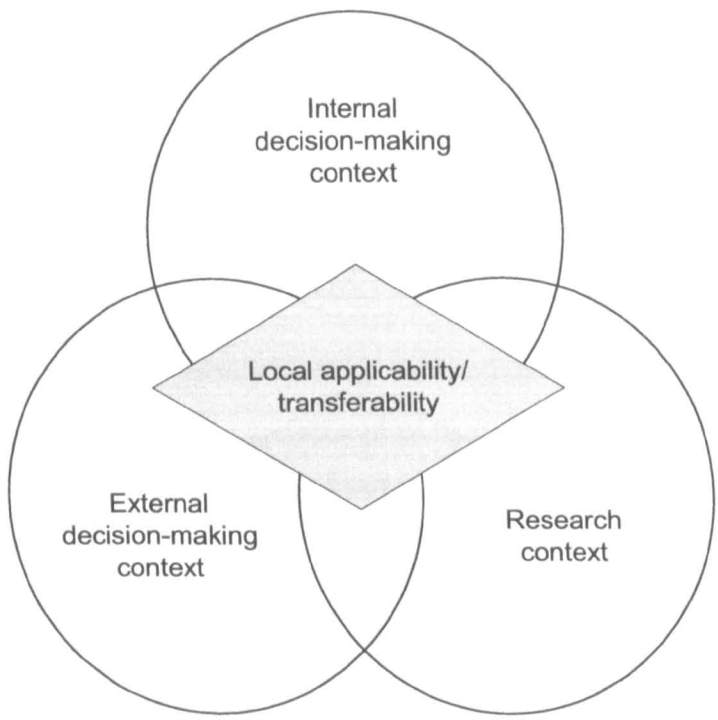
The research context may be influenced by the internal decision-making context. For example, if research is valued highly by decision-makers, they may be more likely to commission studies for their own use. The external decision-making context may influence and be influenced by the research context. For example, the burden of disease or political will may affect research agenda setting. Research findings may also enter public consciousness and help to shape public perceptions of a particular topic. The internal and external decision-making contexts may also influence each other. For example, whether or not a topic is considered sensitive or highly political may affect the process of decision-making (e.g. transparent, formal process may be more likely for a 'technical' rather than a 'political' issue) (Hanney et al., 2002). Powerful stakeholders within the policy process may influence the degree of political support a topic gains.

3.5 Essential national health research

In the case of 'essential national health research' (as conceptualised by COHRED), decision-makers would be closely involved in setting the research agenda, linked in with researchers throughout the research process and informed about research findings (COHRED, 1990). It is expected that this would increase the likelihood that research is conducted on topics of importance to decision-makers, using the methods they value and reflecting the reality in which they work (i.e., the external decision-making context). The three contexts are therefore more likely to be closely

linked, or even overlapping, such that the local applicability/transferability of the research is more likely to be rated highly (as shown in figure 2).

Figure 2: 'Ideal' model of research for decision-making

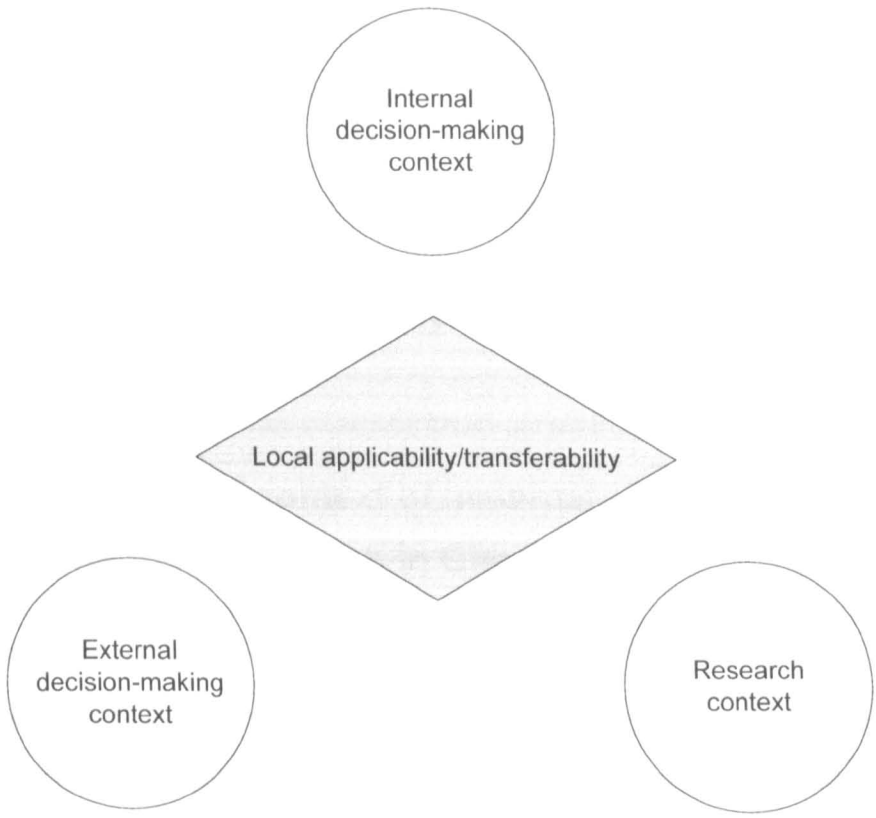


3.6 Local applicability/transferability assessments

However whilst the scenario above may be considered ideal by some, it is far from the reality for many. Even if decision-makers in low income settings were able to fund and set their own research agendas so that research production increased markedly, it is impossible to conduct all the research that could be of use to decision-makers. A vast amount of research conducted in other settings would still exist that could be of potential use, if it were deemed locally applicable and transferable. In these situations, where the decision-making and research contexts overlap only marginally or not at all, the perceived local applicability/transferability of the research study is less certain (see figure 3). It is for these scenarios that

understanding the criteria used (implicitly or explicitly) to assess local applicability/transferability is of greatest potential value.

Figure 3: Dispersed contexts result in uncertain local applicability/transferability of research



4. Aim, Objectives and Research Questions

The purpose of this study was to explore perceptions of maternal health research for decision-making in Ghana. Three objectives were set:

1. To understand the context of maternal health policy, programmes and research in Ghana
2. To explore perceptions of research use in decision-making
3. To understand conceptualisations of the local applicability/transferability of maternal health research in order to develop an improved framework

4.1 To understand the context of maternal health policy, programmes and research in Ghana

The first step in achieving the above objective is to understand the maternal health situation in Ghana. This includes identifying what stakeholders believe are the key maternal health problems and causes of poor maternal health, as well as what the main foci of maternal health policies and programmes are. Perceptions of the potential effectiveness of these policies and programmes will also be explored.

Next, the way in which maternal health decisions are made, at both national and sub-national levels, will be explored. This will include understanding who is involved in national policy developments and the links between national policy development and its implementation at the sub-national levels.

Finally, the context of maternal health research production in Ghana must be understood. How research is funded and who sets the research agenda will be explored. In addition, this study will explore what research is being produced in Ghana, how findings are disseminated and what links exist between researchers and decision-makers.

To summarise, the research questions for this objective are:

1. To understand the current maternal health situation in Ghana
2. To explain the maternal health decision-making context in Ghana
3. To understand the context of maternal health research production in Ghana

4.2 To explore perceptions of research use in decision-making

Before research can be considered useful to decision-makers, they must first be made aware of it. How decision-makers find out about Ghanaian research, as well as research conducted elsewhere, may affect their use or perceived usefulness. The value of research and its perceived importance in the decision-making process is likely to affect both perceived usefulness and use of research. These issues will be explored in the first two research questions (see below).

Perceptions of research use in national policy development, as well as in interviewees' own work, will then be explored. Next, perceptions of the types of research considered useful, or used, in decision-making will be examined. Finally, similarities and differences in the perceptions of researchers, government decision-makers and non-governmental stakeholders will be explored.

The research questions are:

1. To identify how decision-makers find out about research
2. To understand the value placed on research, or the perceived importance of research use in decision-making
3. To explore the extent to which research is perceived to be used
4. To identify the types of research considered useful, or used, in decision-making

5. To explore the usefulness of existing 'international' conceptualisations of research (e.g. 'global' versus 'country-specific') and research use in decision-making
6. To assess whether such perceptions vary depending on the type of researcher or decision-maker

4.3 To understand conceptualisations of the local applicability/transferability of maternal health research in order to develop an improved framework

This objective aims to understand what dimensions and factors are considered important in assessing the local applicability/transferability of maternal health research that has been conducted in other settings. Whether and how perceptions of local applicability/transferability vary between researchers (both within Ghana and elsewhere), government decision-makers and other maternal health stakeholders will also be explored. The views identified from this study will be used to assess the usefulness of the dimensions included in Wang et al.'s framework for the assessment of local applicability/transferability (Wang et al., 2006). Finally, an improved framework will be developed based on the interviewees' conceptualisations.

The research questions for this objective are:

1. To understand what dimensions of local applicability/transferability are perceived to be important
2. To explore how perceptions vary depending on the type of researcher or decision-maker
3. To assess the usefulness of the local applicability/transferability dimensions described by Wang et al. (Wang et al., 2006)

4. To create a framework of local applicability/transferability, based on the findings from the interviews

5. Methods

5.1 Research strategy

Since the study aimed to explore attitudes, beliefs and understandings, qualitative methods were deemed most appropriate for eliciting such complex perceptions (Campbell et al., 1999). Qualitative research is more conducive to a flexible, iterative approach than quantitative research, allowing the questions asked and probing required to develop over the course of the data collection period in order to best match the participants and to ensure the interviews capture the data required to answer the research questions (Green and Thorogood, 2004).

Semi-structured interviews were chosen as the main data collection technique since they ensured that the focus remained on the particular topics of interest, whilst allowing a rich depth of data to be gathered through the use of probes and a flexible approach to the questions and follow-ups. Unstructured interviews were not considered appropriate, since the topics of interest had been predefined and given their complex nature, it was believed that a degree of guidance would be required to ensure they were discussed fully by the interviewees. Similarly, structured interviews were also considered to be inappropriate, since they did not allow sufficient space and flexibility to encourage interviewees to provide detailed responses and explanations, or follow up interesting points raised within the interviews. However, the interviews did incorporate some more structured techniques for eliciting responses to specific questions about local applicability/transferability. Given the abstract nature of this topic, it was felt that the tools used would assist the interviewees by providing examples

and greater clarity about the topic being discussed. Although more structured than a simple question, there remained opportunities for the interviewees to expand and discuss their responses and probes were used to elicit richer and more detailed answers where necessary. The techniques will be discussed in greater detail below.

Interviews were conducted with government decision-makers, policy stakeholders and maternal health researchers in Ghana, as well as some research directors in Ghana and international researchers based in London (who directed research institutions which carried out public health research in Ghana).

This study used an interpretative approach, that is, rather than assuming there is a single, absolute 'truth' or 'reality' that exists, it rather focused on interviewees' interpretations of reality (Green and Thorogood, 2004). Rather than attempting to measure or identify 'the reality' of research use (e.g. whether research was used, or not), it aimed to explore people's views of whether research was used and their perceptions of the factors affecting use.

5.2 Sampling

In order to gather a range of perspectives around maternal health research and decision-making, data were required from both research producers and those involved in decision-making. With regards to the latter group, this included not only national Ministry of Health (MoH) and Ghana Health Service (GHS) staff (hereafter referred to as 'national government staff'), but also regional, district and facility-level GHS staff (hereafter referred to as 'sub-national government staff'), development partners and individuals working for national or international maternal health-related agencies (these last two groups will be referred to as 'policy stakeholders', even though not all were involved in policy discussions). These were identified using a range of techniques, including purposive and snowball sampling. Potential

interviewees were selected if they had been involved in maternal or public health research, policy or programmes. National and sub-national government staff were approached if their work remit included maternal health, even if they were not specifically focused on the topic. Sub-national government staff were interviewed in one urban and one rural region. Policy stakeholders were included if their work specifically covered maternal health issues, or, if there were no staff in the organisation with such a specific focus, those with a broader health remit. Researchers were approached if they had conducted maternal health research in Ghana, or led a research unit that was involved in such research.

Some interviewees were identified from the current Reproductive Health Policy and Standards document, which included a list of participants involved in its development (Ghana Health Service (GHS), 2007). Discussions with colleagues both at the London School of Hygiene and Tropical Medicine (LSHTM) and at the GHS's Health Research Unit (HRU) in Accra also provided some suggestions. Snowball sampling was also used, with interviewees asked to suggest others who could be invited to participate.

Once a potential interviewee had been identified, their contact details were sought through a variety of means. The most common route through which contact details were gathered was through personal contacts, although some were found in documents, on the internet or in person (e.g. at a conference or dissemination meeting). Most contacts were made through phone calls, typically to mobile phones, rather than office lines. The reliance on mobile phones, coupled with the availability of cheap sim-cards, meant that identifying the current, working telephone numbers of many interviewees was a challenge. Repeated attempts were made to contact those for whom contact details had been obtained. For those without an identified current, working number, or where calls were repeatedly not taken, emails were sent (if an address had been identified) or letters were delivered to their offices. Once contact had been made, the study was

briefly explained and their participation requested. If they agreed, a time, date and location convenient to the interviewee were then arranged.

5.3 Data collection techniques

5.3.1 Interview schedule

Semi-structured interviews were conducted using an interview schedule adapted according to the type of interviewee. The schedule developed over time and was flexible enough to be adapted on the spot, depending on either the interviewees' time constraints or their knowledge and expertise, as gleaned during the process of interview. This enabled the avoidance of potential embarrassment to the interviewee which could have arisen if they were asked many questions on a topic unfamiliar to them (e.g. questions about maternal health policy-making in Ghana may have embarrassed those not involved in or aware of the process). It also allowed probing to encourage clarification of meanings and further discussion of emergent issues of interest.

Most interviews commenced with a discussion of the interviewee's role and employment background. They were asked about their perceptions of the maternal health challenges faced at the national or sub-national level (depending on their focus). They were asked about their own involvement in maternal health policy decision-making, who they felt were important maternal health policy stakeholders and the extent to which they felt maternal health policy and practice in Ghana was based on current research findings. Researchers were asked about the maternal health research they had been involved in, including how the idea for research projects came about, who funded and collaborated with them and how their results were disseminated. Directors of research units or institutions were asked questions about the funding and research agenda of the unit.

Policy stakeholders and government staff were asked about their own use of research, whether they'd been involved in any research studies and their perceptions of the use and value of research for themselves and others.

5.3.2 Structured interview techniques

All types of interviewees were asked what they would want to know about a study conducted in another country, in order to assess whether it was applicable and transferable to their own setting (hereafter referred to as the 'brainstorm'). In the first three interviews, questions based on those used by Wang et al. were asked (see table 2 on page 43). However it became clear that these questions were too lengthy and did not encourage the interviewees to discuss the issues in depth. In the fourth interview, a handout was introduced with a list of dimensions which interviewees were asked to rate in order of importance for the assessment of local applicability/transferability (hereafter known as the 'rating question'). In the initial interviews this was based on the framework developed by Wang et al.[4], however after preliminary analysis of the first 15 interviews this was amended to make it clearer and more pertinent to the interviewees (Wang et al., 2006). The two versions are presented in tables 3 and 4 respectively.

[4] The final applicability attribute in their framework, relating to the organisational structure and skills of local interventionists, was excluded because, in the first three interviews, it was found to be too similar to 'resource implications' and 'capacity to implement the intervention', causing confusion and repetition.

Table 3: Original list of dimensions used in the rating question

Dimensions of applicability and transferability
Applicability – *can it be done here?* • Political environment / political barriers to implementation • Social acceptability • Cultural adaptability • Resource implications • Educational level of target population - *will they understand the intervention?*
Transferability – *if it was done here, would it be as effective?* • Baseline prevalence of disease or risk factor • Characteristics of target population - *Are they comparable?* - *Will differences affect the effectiveness of the intervention?* • Capacity to implement intervention

Table 4: Revised list of dimensions for the rating question

Could research conducted in another country be useful here?
Can it be done here? **- Population** Similarities between the population in the study and the target population in Ghana **- Setting** Similarities between the study setting and the target setting in Ghana e.g. health system, infrastructure **- Intervention** How easy would it be to do in Ghana e.g. characteristics of the intervention, human/financial resources needed **- Adaptability of the intervention** **- Acceptability of the intervention** To politicians/decision-makers, providers and the target population
If it is done here, would it be as effective? **- Health problem** Prevalence of health problem – is there a need for the intervention? **- Implementation** How easy would it be to implement? **- Effectiveness** How effective was it in the original study? **- Setting-specific influences** What could make it less/more effective in Ghana?

Finally, interviewees were shown four short study summaries and asked to rank them in order of applicability/transferability to their own context (hereafter referred to as the 'study ranking exercise'). The reasons for their rankings were then probed. Selecting the studies was challenging: if the study designs and interventions were too similar, it provided less variability of the elements which interviewees may use to assess local applicability/transferability. However if studies were too different, for

example comparing a cluster-randomised controlled trial with a post-intervention assessment study, or comparing a study aiming to improve quality of care with a study aiming to encourage health-seeking behaviour, these key, obvious differences may draw interviewees' attention away from the more nuanced, contextual factors that may influence their assessments. In order to reflect the reality of complex public health interventions, the studies represented a range of study designs and included different outcome measures – factors that can make the comparison of studies all the more complicated (Essien et al., 1997; Ahluwalia et al., 2003; Bossyns et al., 2005; Fullerton et al., 2005).

It was decided that the studies used would all target the so-called 'second delay', that is delays in accessing healthcare for obstetric emergencies, once the decision to seek care has been made (Thaddeus and Maine, 1994). This was chosen as a focus because it represents a 'typical' evidence base for complex public health interventions which are often context-sensitive. Although a current international policy focus, there remain few rigorous evaluations of interventions tackling access to emergency obstetric care. The study summaries were shortened after the initial fifteen interviews, following complaints that there was too much reading involved in the interviews. Both versions of the study summaries are included in appendix 1.

5.3.3 Modification of the interview schedule

In the initial 15 interviews, questions were also asked about the perceived utility of a tool for assessing local applicability/transferability, based on one developed by Buffett et al. (see appendix 2) (Buffett et al., 2007). This tool was based on the framework developed by Wang et al. but included a weighting element in order that the relative importance of each dimension could be adjusted (Wang et al., 2006). Interviewees were also initially asked about their perceptions of the usefulness of systematic reviews. Both

sets of questions, on the tool and on systematic reviews, were removed for the remaining interviews. The tool did not appear to be clear and easy to understand for some interviewees and few interviewees were aware of systematic reviews as a research method, making questions regarding their utility difficult to answer. The interview schedule was also felt to be too long for some interviewees; for others, removing these two elements allowed more time for probing and discussion on the remaining questions.

In May 2008 (during the data collection period) the Ghanaian president announced a new policy enabling pregnant women to register for national health insurance for free for one year. This would entitle them not only to free antenatal and delivery care, but free treatment for any other non-pregnancy related conditions experienced during that time that were covered by the scheme. From this time, a question was incorporated in the interview schedule asking about their perceptions of the potential effectiveness of this policy; some were also asked about the development of this policy (if it was perceived that they were involved in or aware of the process). This was not only expected to elucidate their views of the policy, but it could also provide further insights into their perceptions of the key maternal health challenges faced in Ghana and their views of the decision-making process.

5.3.4 The interview process

All the interviews were conducted by the researcher. The interviews lasted for between 20 - 80 minutes, though most were 45 - 60 minutes long.

The use of handouts that required reading during the interview was not anticipated to be a problem, since all the interviewees held positions that

required a certain level of education[5]. For the same reason it was possible to conduct all interviews in English, the official language of Ghana.

5.3.5 Pilot interviews

The first four interviews were intended to be pilots, in that the schedule and tools were amended after each (and then again, after preliminary analysis following the first fifteen interviews, as discussed above). However since these changes were not substantive, it was decided to include three of these initial interviews in the final analysis. The fourth interviewee was excluded because, although based in Ghana, they only worked in other West African countries.

5.4 Ethics

Ethical approval for the study was gained from the ethics boards at LSHTM and HRU. Approval was granted by the HRU on condition that the researcher collaborated with a Ghanaian partner; they then agreed to take on this role and offered desk space during the fieldwork.

Prior to the interview, interviewees were presented with an information sheet which included the researcher's contact details and explained the purpose of the study and the nature of their participation (see appendix 3). They were then asked to sign a consent form which stressed that their participation was voluntary, that they were able to withdraw from the study at any time, that the recording of the interview was optional and that they understood the study's purpose and had had their questions answered by the researcher. They were then verbally asked if they were happy for the interview to be recorded and if they were, the digital recorder was started. If they did not agree to the interview being recorded, notes were made during

[5] One interviewee objected to reading the handouts; in this case the information presented in them was summarised verbally by the researcher

the interview. These were typed up more fully immediately after the interview.

Following each interview, the interviewee was given a unique code which was used in the typed transcript of their interview and during analysis. Their name was not recorded on their transcript or in any analysis.

5.5 Methods of analysis

The majority of the interviews were transcribed by the researcher. The accuracy of those transcribed by others was checked against the complete recorded interview by the researcher. Atlas.ti software was used to manage the data analysis process.

Framework analysis was selected as the method for analysing the data (Ritchie and Spencer, 1994). This method allows the identification of key themes that arose from the data, whilst also providing the opportunity to explore pertinent issues identified a priori (Pope et al., 2000). This was felt to be important in this study, since it aimed to explore key themes that had been identified in the literature but which may not have been identified through inductive analysis alone (for example if an issue was rarely raised or discussed by interviewees). It was also felt to be a pragmatic choice in that it is well suited to the analysis of large volumes of data through a systematic process. There are five stages within framework analysis: familiarisation, identification of a thematic framework, indexing, charting and finally, mapping and interpretation (Ritchie and Spencer, 1994).

5.5.1 Familiarisation

The researcher became familiar with the data by conducting the interviews, transcribing most of interviews and checking the accuracy of the remaining transcripts. Familiarisation continued throughout the analysis process.

5.5.2 Identification of a thematic framework

The first step in developing a thematic framework was to read through an initial selection of five interviews to identify broad codes as they emerged from the data. These were then cross-checked with the objectives and research questions to ensure that they were all covered by the identified codes; additional codes were added as necessary.

5.5.3 Indexing

Indexing, or coding, was completed in Atlas.ti. Once all the transcripts had been coded, the coding framework was revisited. Some codes were then merged if they were too similar, or deleted if they were considered to be obsolete. Other codes were recoded using sub-codes if they were felt to contain large quantities of data that covered a number of issues. The final coding framework is presented in appendix 4.

5.5.4 Charting

Excel spreadsheets were created for each objective. One column was allocated to each code, with each row representing an interviewee. The data were then summarised into each cell, whilst attempting to use the same language and terminology as the interviewee did. Verbatim quotes were included where they were considered useful. In cases where the data included in cells were large despite being summarised, additional 'summary columns' were created alongside the original column. Keywords were used to present a more succinct summary of the interviewees' responses in these columns, to provide overviews of the data. Examples of the spreadsheets are included in appendix 5.

5.5.5 Mapping and interpretation

Following completion of the spreadsheets, every column (or selection of columns, if they related to the same issue), was sorted according to either the type of interviewee or the response given. These were then used to explore patterns within the data and between types of interviewees or responses. Where summaries lacked clarity, the original interview transcripts were referred to.

5.6 Description of sample

In total, 67 interviews with 69 interviewees[6] were conducted between February 2008 and March 2009 in Ghana and England. In total, 24 researchers, 25 government staff, 18 policy stakeholders and two others who had conducted research and also held government positions (either currently or previously) participated. The initial fifteen interviews, conducted prior to the modification of the interview schedule, were conducted with seven policy stakeholders (one of whom was excluded from the analysis - see section 5.3.5 for details), two national government staff, five researchers and one other interviewee. No sub-national government staff were interviewed, since the decision to collect data beyond the national level was taken following the preliminary analysis.

Refusals to participate were few; the reasons given were a lack of focus on health or maternal health. It appeared that the importance of being polite in Ghanaian culture made it difficult for potential interviewees to refuse outright. Instead, it was more common for potential interviewees to be unable to commit a time to be interviewed, or to postpone or cancel interviews that had been arranged. Nevertheless in such cases, persistence generally led to the interview taking place eventually.

[6] On two occasions interviewees invited a colleague to participate in the interview with them.

Most of the sample were Ghanaian, with the exception of two Americans, six Europeans and two interviewees from other West African countries. Table 5 provides more detail about the numbers of each type of interviewee included.

Table 5: Interviewees included in study

Type of interviewee	**Number**
University researchers	15
GHS researchers	9
National government staff	13
Sub-national government staff	12
National/international agencies	14
Development partner staff	4
Other	2
Total	**69**

6. Rigour

There are a number of aspects relating to each stage of the research production process that should be considered when assessing the rigour of a qualitative study (Mays and Pope, 2000; Fossey et al., 2002; Kitto et al., 2008). The first is the clarity of the aims and research questions of the study, as well as justification of the research design. These have been addressed in earlier sections of this chapter.

The sample was large and included several interviewees from each category of respondent; this can be considered one means of triangulation (Mays and Pope, 2000). Triangulation was also achieved through the use of multiple questions addressing the same topics.

The researcher conducted all the interviews, thereby minimising the risk of variation in interview styles and techniques that may influence responses. However this did not mean that all the interviews were identical; the length,

questions and probes used were tailored to each interviewee's particular situation. The interviews were conducted using a warm but neutral tone, in order to create a non-judgemental atmosphere, in an attempt to minimise the risk of acquiescence bias.

The interviews were recorded and transcribed verbatim in all but two cases where the interviewees refused to be recorded and in a third interview, where the recorder broke towards the end of the interview. As mentioned above, in these cases notes were made during the interview and a more detailed record was created immediately afterwards. The majority of the interviews were transcribed by the researcher and, as mentioned above, where other transcribers were used, the researcher checked the transcript against the audio recording and made corrections as necessary.

The rigour of the data analysis was also addressed through several means. There was a systematic and transparent approach to the analysis, making it easy for others to understand how the findings were reached and to repeat the stages of the analysis, if necessary (Mays and Pope, 2000). The researcher coded all of the transcripts and ensured consistency by revisiting all previously coded transcripts whenever a code was added or amended during the coding process. When coding the transcripts, the interviewer's question was coded alongside the interviewee's response (rather than only coding the response), in order to ensure that the possible influence of the wording or phrasing of the question on responses was taken into account. During the analysis the verbatim transcripts were repeatedly returned to, from the excel spreadsheet summaries, to ensure the context and broader meaning of responses was not misunderstood.

In presenting the findings in the following chapters, verbatim quotes are presented in order to illustrate the descriptions and interpretations. Sufficient detail and description of the data is presented to allow the reader to make their own judgement about the credibility of the interpretation. These have been noted as ways of assessing the rigour of the analysis (Fossey et al., 2002).

7. Limitations

There were several limitations to this study which should be noted when considering its findings.

7.1 The sample

There were difficulties in using the snowball sampling technique, since finding out more about a recommended potential interviewee (in order to ascertain eligibility) was difficult. Unlike many organisations in high income countries, many organisations did not provide public information about their staff members through websites and paper copies of annual reports were difficult to access. Nevertheless, despite occasional misunderstandings about the interviewee's role or previous experience, all of the interviewees had an interest in, or previous experience of, maternal health and so remained eligible for inclusion in the sample.

7.2 The study topic

The study was challenging for several reasons, not least because of the nature of the topic. In exploring research use per se, it is difficult to ensure that neither interviewees nor the researcher focused exclusively on the more tangible direct, instrumental research use, to the neglect of other types of use (e.g. enlightening). The questions regarding local applicability/transferability were particularly challenging for a number of reasons. Firstly, as a fairly abstract concept that has gained little attention in the research or decision-making spheres, it was difficult to articulate meanings and questions in a manner that was easily understandable to all involved (e.g. the term, 'local applicability and transferability', did not have a meaning universally understood by all). Secondly, since most local applicability/transferability assessments appear to be implicit and even sub-

conscious, on some occasions it appeared difficult for interviewees to consider the related issues and express them clearly.

The use of pre-defined frameworks may have affected participants' responses, however this limitation was deemed necessary given the difficulties in understanding the questions about local applicability/transferability. Finally, there remained the risk of acquiescence bias, particularly if respondents associated the researcher with the evidence-based movement and therefore assumed that positive responses regarding research use were desired. To minimise this risk, the researcher assumed a neutral, judgement-free style throughout the interviews. The fact that many interviewees appeared relaxed in the interviews and were frank about their disappointments, challenges faced or negative opinions suggests that this may have been overcome to some extent. However the possibility of it affecting some responses for some participants still remains.

7.3 Practical challenges

There were practical difficulties encountered that reflected the realities of working in a low income setting. Power cuts were frequent, particularly during the rainy season, which inhibited work conducted on a computer or after dark. Internet access was poor, which limited access to online journals, email correspondence and other online information. Other difficulties arose from being relatively new to the setting; the time spent seeking goods for interviews, such as buying batteries for the dictaphone or printing and photocopying handouts and consent forms took a lot longer than would have been anticipated if the work had been conducted in the UK. Nevertheless, positive sides of working in Ghana remained. For example, the helpfulness and friendliness of Ghanaians frequently benefited my work and the accessibility of those in even senior government positions would not have been expected if the study had been conducted in the UK.

8. Status of the researcher

As a white researcher from the UK, I was an 'outsider' for most of those interviewed in this study, with implications for data collection and analysis. The fact that I came from a country which is associated with the evidence-based movement and is a strong player in international health policy may well have affected interviewees' perceptions of me and so influenced their responses. In addition because I was not Ghanaian, my interpretations of verbal and non-verbal communications (both during the interviews and in the analysis) may differ from those of a Ghanaian.

In addition, the implicit power imbalances and other, more pragmatic difficulties that may be encountered when interviewing an 'elite' may have influenced both who was available for interview, for how long and the responses provided[7] (Cohen, 1973; Richards, 1996; Lilleker, 2003; Delaney, 2007; Morris, 2009; Rice, 2010). However, apart from one instance of 'delegation' of the interviewee to a more junior staff member, most interviewees agreed to participation and were available for the length of time required. It is possible that the power imbalance between the senior staff members interviewed and the 'junior' researcher may have helped to counteract the risk of acquiescence bias.

[7] It is interesting to note that the methodological literature on elite interviews appears to almost exclusively focus on those conducted in high income countries. The interaction of high income researcher with low income elite does not appear to have been explored from a methodological perspective.

Chapter 3:
Maternal Health Policy and Research Contexts in Ghana

1. Introduction

This chapter sets out the context of maternal health decision-making and research production in Ghana in order to set the scene in which the subsequent findings chapters will be located. As shown in the conceptual framework presented in the previous chapter, contextual factors may influence perceptions of the use and usefulness of research. This chapter will first summarise the maternal health situation in Ghana, both according to official data and the perceptions of the interviewees. Second, it will discuss the policies relating to maternal health and, third, the decision-making context. This will allow an understanding of the receptiveness of these processes to research, as well as the scope and capacity for research use, which will inform the analysis of data on perceptions of research use and usefulness detailed in the following chapter. Finally, public health research production in Ghana will then be explored, first looking at the broad context before focusing on maternal health research specifically. Research funding and research agenda setting will be particularly considered as factors likely to have implications for perceived usefulness of research. This will allow an understanding of the potential for research use in terms of Ghanaian research and the implications this may have for perceptions of foreign research and research use (which will be discussed in the following chapter).

2. The Maternal Health Situation in Ghana

2.1 Maternal health challenges

2.1.1 Evidence from policy documents

A national survey in 2007 estimated the pregnancy-related mortality ratio to be 580 per 100,000 live births (Ghana Statistical Service (GSS) et al., 2009). Whilst far higher than the government's previous estimate (214), it is

similar to that estimated by the World Health Organisation (WHO) in 2005 (560) (WHO et al., 2007; Aboagye, 2008). Whilst lower than the estimated ratio for sub-Saharan Africa (900 per 100,000 live births in 2005), it remains higher than the estimate for developing countries in general (450 per 100,000 live births in 2005). Recent surveys have calculated antenatal care coverage to be around 90%, although skilled attendance[8] rates are lower, at less than 50% (Ghana Statistical Service (GSS) et al., 2004; Ministry of Health (MoH) [Ghana] et al., 2006). Given that Ghana is one of the more developed and stable countries in sub-Saharan Africa, one would have expected this latter rate to be substantially higher than the estimated rate for the sub-continent, which was 47% in 2006 (2008).

The annual independent review of the health sector programme of work for 2007 found a worrying downward trend in skilled attendance rates, from 44.5% in 2006 to 35.1% in 2007 (Ministry of Health (MoH) [Ghana], 2008a). The report suggests that this may partly stem from improved classification procedures which excluded trained traditional birth attendants (TBAs) from skilled attendance figures (however as can be seen in table 6, these latter figured increased by less than 2% in the same period). It was also suggested that the decline may be due to the cessation of the previous fee exemption policy for delivery care in 2007[9]. The following year's review found rates had increased to 39.3% and attributed this to the introduction of the fee exemption policy for National Health Insurance Scheme (NHIS)[10]

[8] Skilled attendance has been defined as combining a skilled attendant – an accredited health professional such as a midwife, doctor or nurse with specific training and skills in pregnancy and childbirth – with an enabling environment for safe childbirth, such as equipment, drugs and transportation for referral to emergency obstetric care (MacDonagh, 2005)

[9] The fee exemption policy for delivery care was introduced in four regions in 2003 and was rolled out nationally by 2005. Prior to this, user fees had been collected for delivery care. In 2004, the national health insurance scheme (NHIS) was launched (Ghana Statistical Service (GSS) et al., 2009). The fee exemption policy was then unofficially abandoned, with its funding running out in 2007.

[10] In 2008 a new exemption policy was introduced, entitling pregnant women to free NHIS registration. This will be discussed in more detail in the following section.

(Ministry of Health, 2009b). This is well below the 60% target for 2008. Table 6 shows the maternal health indicators for 2006-8, as reported in Independent Health Sector Reviews.

Table 6: National maternal health indicators
(Ministry of Health (MoH) [Ghana], 2008a; Ministry of Health, 2009b)

	2006	2007	2008
Antenatal care coverage	88.4%	89.5%	95.0%
Skilled attendance rate	44.5%	35.1%	39.3%
Proportion of deliveries attended by TBAs	13.8%	15.7%	n/a
Proportion of maternal deaths audited	58.2%	66.7%	n/a
Adolescent ANC attendance rate	13.2%	12.0%	n/a

2.1.2 Interviewees' perceptions of the maternal health situation in Ghana

When discussing the maternal health situation in Ghana, interviewees recognised that there was no single challenge or simple solution.

> "Let me say maternal health, I've found a very complex challenge, in that it involves a lot more than we think, you know? Both from the client perspective and from the health system's perspective. And so some of the challenges you need to work on the client and it has to do with education...education of the women, lots of changing attitudes and practices among the community, cultural ~ practices. And then the health system itself faces a lot more challenges, in terms of human resources, skill levels,~ I think those are the, ~~ quality of care in terms of client friendliness, trying to make the facility client-friendly so that more and more people will feel more comfortable coming into it. So the quality of care challenges are issues, the skill level of the providers and then, the human, manpower issues~. And I

> think the last I would add is the managerial gaps, because that affects the service quality...management of health facilities, in general, I mean, which has to do with logistics and supplies"
>
> 012, other

Most people felt that, in terms of health care coverage, antenatal care was not the problem, although some highlighted concerns that many women either attended late in their pregnancy, or did not attend for all the recommended visits. Care at delivery, as well as postnatal care, was generally considered to be where attendance rates needed to improve.

> "You know the big challenge is actually how do you get the pregnant woman from the community to the health facility. They go for antenatal 90%. There is no problem, when it comes to delivery, that is where the big issue is...So that is actually the biggest challenge. If all the 90% that attend antenatal will all deliver at the health facilities then we can be sure that there will be supervised deliveries, there will be less maternal deaths and all that. But that is actually the biggest challenge."
>
> 033, GHS researcher

However very few mentioned the sharp decline in skilled attendance rates that had been published in April 2008 (during the early stages of the data collection period). A few also mentioned that family planning rates were low, or alternatively that fertility was high. Abortion, particularly unsafe abortion, was also raised as a concern by a few interviewees, as was young people's sexual and reproductive health. Several also noted the difficulties of not being certain of Ghana's maternal mortality ratio, or that routine data systems were unsatisfactory.

"I think one of the major challenge has to do with adequate and reliable statistics on what is happening. Adequate and reliable statistics on what is happening. Because we need to generate the data to be able to use that to inform whatever we are doing. But we know that we have a lot of challenges, getting the right data, to make the right information. So you just have to make do with the best that you have. So right now we use the 219, 214 per 100,000 live births, the 1993 survey, that's the reliable one that we've been using but I know that, I mean, efforts are being made to update it, to make it more recent. I think that is one of the things we need to work on."

023, policy stakeholder

The question about maternal health challenges appeared to be a good indicator of the interviewee's awareness and understanding of maternal health. Those who did not appear to have specialised maternal health knowledge were more likely to talk more generally about Ghana's maternal health challenges.

"The key challenges...erm, now at the moment we all want to attain the MDG 5 for example, four and five but mostly five, because that is what we think we may not be able to achieve. A-ha, so, our challenge is how to, to to get to achieve that, that MDG and within that cont-, within that context especially health sector development you know, is a bigger issue. Health services delivery, health service delivery and for funding, for funding I don't see it as a major issue because we have put in so much but we are not seeing the results."

008, policy stakeholder

Many of the maternal health challenges discussed could be categorised according to the 'three delays'[11]. With regard to the first delay, some mentioned women's preference for seeking care outside of the biomedical healthcare system (particularly for delivery care) e.g. from TBAs, at prayer camps or from traditional healers. Others highlighted that women themselves may not be in a position to make the decision to access care, or that traditional beliefs (such as perceptions of pregnancy as non-risky, or a lack of birth preparedness) meant that women did not seek care in facilities. Cost was also a factor considered to be preventing women from accessing healthcare, not only in terms of fees but also because of other costs entailed, such as for transportation to reach health facilities.

> "sometimes even though deliveries are supposed to be, particularly for people who have national health insurance here in Ghana, delivery is supposed to be free, but in fact what happens sometimes is that they still get charged for certain things and that becomes, you know, a barrier. Whereas again, it's less expensive if they go to a TBA or something"
>
> 001, policy stakeholder

> "transport to facilities is, is a big problem. As soon as there's an emergency the cost of transport goes up ten times."
>
> 020, other

In terms of the second delay, issues around transportation and poor road networks were highlighted. Some also mentioned the poor distribution of, or lack of proximity to, health facilities as a factor preventing healthcare use. This was particularly felt to be a factor in rural areas, although some noted

[11] This well established framework sets out three delays that may occur during labour and delivery, between the onset of obstetric complications and maternal death: firstly, a delay in deciding to seek care, secondly a delay in reaching an adequate health facility and thirdly, a delay in receiving adequate care at the facility (Thaddeus and Maine, 1994).

that problems were also experienced in urban areas, particularly in the capital, Accra, due to traffic or poor geographical distribution of facilities.

> "When many people think, ah Accra is, Accra is the capital, it has everything. That's not true.... You find that most of the facilities are down there...[*ok so they're all clustered in one area and other parts of Accra don't have facilities*]...and the, the population here, [*name of area*] – it's huge, huge. And you have a lot of, roads here, not tarred. There's no facility here. The closest one is here...[*yeah ok so it's poor distribution AND a general lack of facilities as well – insufficient amount of facilities*] yeah...so, I say, you have people here, [*name of suburb in Accra*], they look at the traffic and all that coming here and say...look, it's faster to go into [*name of town*] which is Eastern region, not Greater Accra [*region*]"
>
> 014, policy stakeholder

A lot of challenges were noted around the third delay concerning healthcare delivery and quality of care. Whilst some explicitly spoke about a lack of funding for maternal health services and programmes, others pointed out that facilities lacked equipment, infrastructure and/or staff. Issues relating to staffing were commonly mentioned.

> "There are many challenges and I don't know which one to list first. Perhaps I'll say the number of practising midwives has reduced considerably over time. Even though midwives are being trained, a lot of them had left. So the number of midwives in various facilities had reduced. That's the first. The second challenge would be availability of resources in the hospital. Skill of attendance – I don't know if you're aware of the midwifery life saving skills programme that was mounted? Not all the midwives have benefited from it and so that's a problem. But the ministry itself mounted a safe motherhood training skills programme. Even that is not, well it was run, it still hasn't covered everybody."
>
> 068, policy stakeholder

Poor attitudes of health workers were cited by some, whilst conversely others considered their poor motivation and low staff morale. Some referred to the need for more training, either of existing staff members or as a means of increasing the size of the workforce. It was commonly accepted that there were insufficient numbers of healthcare workers in general and that staff retention was a problem. Failures in the systems, such as blood transfusion supplies and services, or referral and communication systems were also highlighted. Some interviewees talked more generally about quality of care being poor, or that capacity for dealing with obstetric emergencies was lacking. These issues were often linked back to the 'first delay' as reasons why women preferred to deliver outside the healthcare system.

> "But in Ghana, there are too many problems...institutional shortfalls. Because the institutions are a great disservice to the women. When they come, they get frustrated and then...they don't want to come back to the, they are a great disservice to the women. Yes...it becomes something like a vicious cycle. You come to the institution, you don't have the good care,

> you feel you've not had the best of care, and so you don't want to come back. Your relatives also don't want to come back to the same institution and so they stay in the house, they develop complications, and come back to us very late and in a very bad state. We are unable to save them. They, maybe we lose them. It sends the wrong signal to the community. And then the community shy away from us and so they will not come early, they will stay and come when they don't have any other choice. So it sets up this vicious cycle."
>
> 029, sub-national government staff

2.2 Existing maternal health policies and programmes

2.2.1 Evidence from policy documents

In April 2008 the Minister of Health declared maternal mortality to be a national emergency and pushed for reproductive health to be a higher priority (Ministry of Health, 2008). At the 2009 health summit, where development partners and government met to review the health sector's performance in the previous year, it was noted that maternal, neonatal and child health had remained a top priority for Ghana in recent years (Ministry of Health, 2009a). However the implementation of recommendations was felt to be slow and the subsequent progress towards the Millennium Development Goals (MDGs) was behind schedule[12]. The 2007 National Health Policy noted that maternal, infant and child mortality rates were 'frighteningly high' [p23] (Ministry of Health (MoH) [Ghana], 2007). Their importance, at least on paper, was reflected by the title of the 2009 programme of work: 'Change for Better Results: Improving Maternal and Neonatal Health' (Ministry of Health (MoH) [Ghana], 2009a).

[12] The MDGs were declared in 2000 and represent an internationally accepted framework for development. Two of the eight goals relate directly to maternal and child health: MDG 4 aims to reduce child mortality and MDG 5 aims to improve maternal health by 2015 (United Nations, 2008).

The current Reproductive Health Strategic Plan (2007 – 2011) is the third reproductive health policy document produced in Ghana since the first Policy and Standards were published in 1996 (Mayhew, 1999; Ghana Health Service (GHS), 2007). The current plan's first strategic objective is to reduce maternal morbidity and mortality, under which lie five intermediate objectives: improving access to obstetric care, improving home-based life-saving skills, increasing skilled attendance rates at delivery, increasing coverage and improving quality of antenatal and postnatal care and ensuring the availability of comprehensive abortion care services as permitted by law.

Several other key policies and programmes are directly relevant to maternal health. Arguably one of the most significant, in terms of national prioritisation, is the Community-based Health and Planning Services (CHPS) initiative. Initially started as a pilot research project in the north of Ghana (the Community Health and Family Planning, CHFP, project), it aims to reorient health services, bringing them closer to the community (Nyonator et al., 2005). Although it originally focused on health education and preventive services, it was recommended that it be repositioned as a maternal and child health-focused initiative in the 2007 Independent Review of the Health Sector and in the 2008 consultative meeting. This was then mentioned as a priority in the 2009 Aide Memoire (Ministry of Health (MoH) [Ghana], 2008a; Ministry of Health (MoH) [Ghana], 2008b; Ministry of Health, 2009a).

Another key policy for maternal health is the High Impact Rapid Delivery (HIRD) initiative. This aims to rapidly scale up key maternal and child interventions to achieve high coverage levels in a short period of time (Ministry of Health (MoH) [Ghana], 2008b; Ghana Statistical Service (GSS) et al., 2009). It was based on the UNICEF Accelerated Child Survival and Development strategy and targets 'cost-effective' interventions, whilst maintaining flexibility within the decentralised system (Van Veen, 2008).

The development and implementation of the HIRD programme at national and sub-national levels will be discussed later.

In May 2008 the president reiterated that maternal mortality was a national emergency, announcing a policy that exempted pregnant women from paying national health insurance contributions for one year (Ministry of Health, 2009b). Using funds from the British government, registration with the national health insurance scheme (NHIS) would become free for pregnant women and new mothers. This would entitle those registering not only to free antenatal, delivery and postnatal care, but also to free health care for any other conditions covered by the scheme.

An integrated mother and child health campaign ran in 2007 and 2008, with vitamin A supplements, bed nets and de-worming treatments being distributed and immunisations conducted (Ministry of Health, 2009b). However the extent to which maternal health was targeted in these campaigns is unclear.

Possibly the largest non-governmental initiative was the Reducing Maternal Mortality and Morbidity (R3M) programme, which focused on increasing access to safe, comprehensive abortion and post-abortion care, as well as increasing family planning use. This was a consortium of five organisations: Population Council, Engender Health, the Willows Foundation, IPAS and Marie Stopes International ("R3M Ghana: Reducing maternal mortality and morbidity," 2009).

2.2.2 Perceptions of maternal health policies and programmes

Interviewees accepted that the general policy goal for maternal health in Ghana was to reduce maternal mortality (a few also mentioned maternal morbidity and neonatal mortality); indeed many did not feel it necessary to state this explicitly, though their views indicated that it was considered to be the focus. Many referred to the aim of attaining the MDGs 4 and 5.

> "The main focus of maternal health in the region and in all the district hospitals is to work towards achieving the Millennium Development goals 4 and 5: reducing infant mortality and improving maternal health and specifically looking at reducing maternal mortality by three quarters come 2015."
>
> 040, sub-national government staff

Although a few key policies and programmes were mentioned by several interviewees, in general it seemed that, beyond the broader aim of reducing maternal mortality or attaining MDGs 4 and 5, there lacked a clear consensus regarding the specific national policy focus.

Several interviewees made reference to CHPS, although only a few associated it with maternal health (it was generally seen as a community-based primary care policy). Aside from the Reproductive Health Strategy (which was rarely discussed by interviewees), one national policy that was mentioned in relation to maternal health was HIRD. At national level it was viewed as a means of increasing coverage of a selection of "proven" (058, national government staff) maternal and child interventions within a short timescale. The rationale behind HIRD was that implementing effective interventions will not have a public health impact unless coverage rates are over 70%. Without investment of resources and a concerted effort to push interventions to scale (e.g. as is seen in exemplary pilot sites), coverage rates merely creep up slowly, with a resulting lack of impact. As one national government interviewee explained, "you just cannot incrementally scale up priority interventions" (058, national government staff).

Interviewees explained that HIRD activities depended on the needs identified at the local level. Some noted that it focused on community aspects of maternal health, such as community mobilisation to encourage health service use, or improving immunisation, antenatal and postnatal coverage rates. HIRD funds were also used to buy equipment.

> "...it's a national policy that has been disseminated but as far as the HIRD is concerned it is purely a local initiative to decide where interventions are required."
>
> 040, sub-national government staff

A few were critical of aspects of HIRD, either feeling its approach was so flexible there lacked a clear understanding of what it actually was, or that its monitoring and financial procedures were weak.

> "And I think for two years we've been talking about HIRD... then if you go around [and] ask well what do you actually mean by HIRD... we had a meeting about two months ago and nobody could actually explain what the HIRD strategy was. What the package was."
>
> 010, policy stakeholder

Those critical of government policies and programmes tended to be generally dissatisfied with the government or health sector, or were those 'outside' of the core policy development network.

The programmes and work conducted by non-governmental organisations were also discussed. Training and the skill development of healthcare providers was stated as a major programme focus for many of those interviewed, particularly among the national/international agency staff. Some discussed clinical skill development, such as active management of the third stage of labour, whilst others mentioned safe motherhood or life saving skills training programmes or general refresher training. Others mentioned initiatives to improve quality of care, which may have included training, the establishment of maternal death audit systems, the measurement of institutional maternal mortality ratios or the provision of equipment. Few mentioned involvement in training new staff in order to address the lack of health providers (especially midwives) that had been recognised as a major challenge.

The training of TBAs was frequently discussed, with strong, mixed views expressed. Although some accepted the international- and national-level shift in emphasis away from TBAs, others felt that they were an effective and beneficial resource for improving maternal health. Some of these disagreed with the research cited by those de-emphasising TBAs (which was recognised as both Ghanaian and international research). Others merely felt that such training remained necessary in the current Ghanaian context, since there were inadequate numbers of healthcare providers to offer care to the whole population and because women still often preferred home deliveries attended by TBAs. Some acknowledged that there were some specific issues (such as in emergencies and for newborn health) where TBAs were unable to help, but still felt that in general they were beneficial. A few mentioned the possibility of linking TBAs in with healthcare services as a means of integrating traditional and biomedical care systems in order to improve maternal health outcomes.

> "Previously we were adding deliveries recorded by traditional birth attendants but for some obvious reasons, you know, they say, no, no, no, traditional birth attendants are not assisted delivery, because the international community says no, so in Ghana, we say no. You know, which means that the international community does not recognise the reality we live with here, you know. I mean if you train somebody to deliver and to help, to assist with delivery and the person is able to do, to record it, why not? You know, so we say, yes, we like you but no, we don't like you. So we are, we are ventriloquists, hmm, we speak with forked tongue, like a snake, you know. Officially, you know, it's like traditional healing, officially, officially we will talk about these things, 'oh, blah, blah, blah, blah', but when you go down to the Ministries they tell you, 'oh, no, no, no'."
>
> 047, academic researcher

"in fact our position that it's not as if we are so much in favour of, say, TBAs, being the ones that deliver, but the question we ask is that, you can't just take them out or de-emphasise them and leave the women alone. Because if you look at the data right now, in Upper East and Upper West, friends and relatives still form a significant proportion of people who assist women in delivery. And these are people who don't have any skill at all. At least for TBAs they are usually people with some, a little bit of skill, they are well known in the communities and because they've been practising for some time issues of privacy and all of those are kept. And again because they know they play this role they are usually available and everyone knows them as such. But if you just leave it to anybody and anyone, I mean people just get to labour and it's just your friend who happens to be at the, around, or a relative who happens to be around who can deliver you."

017, policy stakeholder

"Again some have also involved even the traditional birth attendants, going to them because this is what the people, the community members want to do. Want to go, they want their services. So how best can we even collaborate with them so that they can refer the complicated cases to them or they can even conduct safe delivery or even the midwives in the CHPS compound, how can they involve them to be part of the er, er, the delivery process or to support the TBA to conduct the delivery. So each district has its own peculiarities."

027, sub-national government staff

"we are de-emphasising maybe training of traditional birth attendants but we are still training them and I think you have to, you know, it's better to

> have something, you know, than not to have anything at all so if for any districts that think that for now, they will train them as a stop gap until we have a lot of midwives that we can put in the communities, they can go ahead. But there isn't a national policy to train birth attendants but for the districts, they are free to train them until such time, as I say, that we have enough midwives to place in the communities"
>
> 030, national government staff

As mentioned in the previous chapter, the last part of the interviews included a study ranking exercise. Interviewees were presented with examples of evaluations of community transport and loan schemes, as well as a programme that trained primary care givers in first aid, birth preparedness and pregnancy risk awareness. This frequently prompted interviewees to describe examples of similar projects that had run, or were running, in parts of Ghana. It was clear that a few key projects, despite being relatively small in size, had been disseminated widely among the public health community, with many interviewees mentioning them. One project in particular, which was mentioned by several interviewees, ran in one district and was replicated in a few others. It involved the development of a memorandum of understanding between the local government and/or local Ghana Health Service (GHS) and the Ghana Private Road Transport Union (GPRTU), a powerful union for taxi drivers and public transport workers. Such agreements stipulated the fees that taxis could charge for taking pregnant women referred or in labour to health facilities. These fees were then paid by the district assembly and local GHS. Other elements of the projects included radio communication equipment and three-wheel tractor-ambulances, for use in areas without roads.

> "the Ghana Private Road Transport Union – they are a big and powerful union. And, increasingly, people think or stakeholders think you should involve the Ministry of Transport...involve the GPRTU, because, at the end of

> the day, if a woman needs to get to the facility...very early, the woman does not have money to pay for transportation, these systems have been put in place where, the members of the union take the, the woman, or whoever, to the facility without you know, charging"
>
> 006, academic researcher

2.3 Fee exemption policy

Following the announcement of the fee exemption policy for pregnant women in May 2008, questions were incorporated into the interviews to find out people's perceptions of how the policy came about and how effective they felt it would be in improving maternal health.

Those who discussed how the current policy came about explained that it was a presidential directive. One national government interviewee explained that it resulted from a reallocation of funds that the British government had previously agreed to donate to Ghana to support the health sector in general. Although portrayed in the media as though it was an additional donation, it was not in fact funded with new, additional money.

Interviewees noted that the concept of fee exemptions was not new to Ghana; the most recent previous policy being a fee exemption policy for delivery services.

> "it's not actually a new thing. In the mid-90s the previous government introduced what they call exemptions for, it was targeting antenatal care, children under five and the elderly, above 70 years."
>
> 050, national government

> "this initiative looks slightly different from the free exemption policy that we had in the past. Because in the past the money was channelled through the Ghana Health Service which is the service delivery agency but as it is now the funds will be channelled through the national health insurance scheme. And so it's not like the one providing the service is the same one buying the service. But they are now two different institutions, one buying the service and another providing the service"
>
> 017, policy stakeholder

As the quote above notes, the main implementation difference between the current and previous policies mentioned by interviewees was that, whilst the previous policy was administered by the GHS, the current policy is through the NHIS. Some were positive about this, feeling it would increase efficiency, sustainability or funding flows. However concerns were raised about certain issues, such as the exclusion of family planning and comprehensive abortion care from NHIS cover.

> "And so it's not like the one providing the service is the same one buying the service. But they are now two different institutions, one buying the service and another providing the service and I think in terms of efficiency that would have some gains compared to the past where funds would usually run out even before the end of the year."
>
> 017, policy stakeholder

> "This time it's coming through health insurance which is a more sustainable way of funding. So we, if the health insurance also does their part by putting in money to improve on infrastructure and things I think it will eventually be a good thing. But we can do it only for a certain period and we have to encourage people to have their own, I mean come for

> health insurance voluntarily, knowing the benefits that they would receive and also the fact that health insurance does not cover, the package does not cover family planning goes back to the same thing."
>
> 059, national government staff

Reimbursement was recognised as a key problem of the earlier fee exemption policy and some flagged it as a potential problem for the new policy as well. One sub-national GHS interviewee pointed out that a large volume of paperwork was necessary in order to claim reimbursement, which sometimes caused delays for patients. Sustainability was also raised as a concern, since it was pointed out that the DFID money was for a limited period only. A few interviewees felt that the involvement of the NHIS meant that this was less of a concern, either because it would encourage people to register for insurance or because continuing funds could be raised through fee-paying members of the scheme.

> "ensuring that the funds and the logistics and other support is timely [is a challenge]. Because the previous one ran into a lot of difficulty because, yeah, people went ahead and exempted but then they didn't get the refunds, in time...and that has been the problem. Now with, I mean, we've not run insurance, the National Health Insurance for some time, so the money is now, if you like, ring-fenced. I mean you now have an assured source of money, at least for some time for ensuring that the free service can take place. So that should no longer be the problem and I think they've worked out the flow of funds."
>
> 062, other

Respondents had mixed feelings regarding the potential impact of the policy on maternal health. They tended to implicitly focus on the potential for the policy to affect maternal health through access to skilled delivery

services, although a few pointed out that a wider range of health services were covered. As the quote below illustrates, many felt that although it will be beneficial, there were several other issues that also needed to be tackled.

> "for those who were not attending because of cost, health insurance and the free maternal health services work, to an extent. But...it can [only] help up to a point. But I don't see it as a solution to maternal health problems."
>
> 045, national government staff

Aside from financial barriers, other factors were noted as inhibiting health services use, such as additional costs (e.g. transportation costs) that were still incurred when using services (Burchett and Mayhew, 2009b). Cultural barriers to service use, particularly preferences for home births or TBA–assisted deliveries were also suggested as reasons why the policy may not be effective. Physical access issues, such as a lack of roads or public transport were also highlighted as other obstacles which the policy could not overcome by itself.

> "effective to a certain extent but it may not solve all the problems. To the extent that people can come into the health facility without having to pay for services, that seems to have increased access a bit and so people come to deliver in the facility. But it doesn't solve the problem of geographical access. And so in many parts of this district, for instance, where people are far away from any facility at all, when, even if they, however much they may want to come into the facility when they are in labour, they simply cannot. Because they cannot access the services. There is no transport, it's in the middle of the night. They're in the middle of nowhere. They cannot come in. The nearest person is a traditional birth attendant. So they just have to go there."
>
> 064, sub-national government staff

A major issue that interviewees felt affected people's desire to give birth in facilities was the quality of care received. Quality of care covered issues of staff numbers and workload, their skills and attitudes, as well as equipment and facility infrastructure. Some felt that the fee exemption policy could have a negative impact on quality of care since increasing the number of service users would lead to overcrowding, without addressing the issue of staff workload. This would mean that not only could those attending fail to receive high quality care; it could also put women off attending in future.

"So...when you just ask them to come...and they see the congestion and they see the difficulty, when they go home they will not come back. So really the problem has not been tackled head on. Some of us will have preferred situations which we have advocated... Quality service is attractive and if you make it fairly affordable, or if we improve the quality first before we open it to be free, then people will come. But now, they crowd on us but we are not able to deliver quality service and so therefore we are not seeing the impact. If there is going to be any impact it will be negative."

029, sub-national government staff

Some of those who did not believe the policy would be effective in improving maternal health felt that, because the earlier policy showed no 'impact', the current policy would also be ineffective. Some of these cited the previous example as proof that financial barriers were not the major factor preventing health service use. Others, such as the interviewees quoted above and below, felt that it was targeting the wrong issues.

"My position is that, I do not think that the free maternal health exemption will lead to reduction in maternal mortality, because there are other things that result in maternal deaths."

031, national government staff

"You can get the American government, we can get the British government, we can get the EU, we can, to give us $1billion every year for women to come and deliver free in the hospital and we'll still have the levels of maternal mortality we have right now because we are putting the cart before the horse. We are not looking at what are the, what are the fundamentals."

039, GHS researcher

Several interviewees pointed out that the impact of the new policy will need to be assessed through routine data and monitoring and that time will be needed before a judgement of its effectiveness could be made. A few mentioned that early data revealed increases in skilled delivery rates, although one advised caution in interpreting the cause of this. In contrast, one sub-national government staff (interviewed in January 2009) reported that he had not seen improvements in service use in his district.

> "yes, it will, definitely it has, definitely improve but er, I will say that we cannot draw any conclusions now since it is only, it started in July, right? It will be very early but what we are seeing and what we are hearing from our staff working on the ground, they are telling us that now, the attendance to the health facility has increased."
>
> 065, sub-national government staff

2.4 Summary: Maternal health situation

- The maternal health situation in Ghana was complex, involving many challenges with no simple solution
- Although maternal mortality was officially considered to be a priority issue, there lacked a clear consensus about national policy, beyond the broad aim of reducing maternal mortality
- It was generally accepted that skilled attendance was a key challenge, but very few mentioned concerns that rates had declined in recent years
- The Reproductive Health Strategic Plan, CHPS, HIRD and the fee exemption policy for pregnant women were key national government policies that targeted maternal health.
- Training was considered to be a key activity for many policy stakeholders

- TBA training was a controversial topic, eliciting strong views both in support of and against the (international and national) policy shift away from it
- The fee exemption policy also stirred strong, mixed views, with concerns raised about its implementation and sustainability; many interviewees did not believe it would be effective at improving maternal health

3. *Maternal Health Decision-Making in Ghana*

The health system in Ghana is decentralised, with the Ministry of Health (MoH) and GHS at national level. Under the GHS are ten regional health administrations and 138 district health management teams (Ministry of Health (MoH) [Ghana], 2001; Asante et al., 2006). Although the MoH is charged with formulating policy and the GHS with service delivery, in practice the separation is less clear (Mayhew, 2003). For instance, the current Reproductive Health Strategic Plan was produced by the GHS, although the GHS Director-General stated in its foreword that it was developed by the GHS and the MoH (Ghana Health Service (GHS), 2007). Despite the decentralisation policy, previous studies found that priority setting and resource allocation decisions in Ghana were "essentially driven at the national level" [p27] (Birungi et al., 2006); (Mayhew, 2003).

A sector-wide approach (SWAp) was adopted in the 1990s, however some development partners, such as USAID, continue to disburse earmarked funds only, whilst others contribute both earmarked and non-earmarked funds (Mayhew, 2004; Ministry of Health, 2009b). The health sector currently receives funding from development partners, out-of-pocket payments, national health insurance scheme registration fees and loans and other schemes (Ministry of Health (MoH) [Ghana], 2008b).

3.1 Actors' involved in policy decision-making

Although the current fee exemption policy is an example of an autocratic, presidential directive, interviewees also described a more consultative approach to policy development. The first Reproductive Health Policy and Standards were published in 1996, although they were in development for several years prior to this. A national consultative meeting on Safe Motherhood was held in 1993, bringing together researchers, government decision-makers and other stakeholders, as one GHS doctor explained,

> "there had not been any policy document concerning reproductive health or maternal health and so at that meeting it was agreed that the Ministry of Health in conjunction with all the stakeholders should come out with a document that will address maternal health, or reproductive health in general including maternal health."
>
> 054, sub-national government staff

During this policy's development a conscious effort was made to bring in a wide range of stakeholders. Meetings were held with stakeholders and their comments were invited and reviewed at several stages. As one government interviewee explained,

> "We tried to make it a national document and not a Ministry or Ghana Health Service document so that when we finished, everybody, every institution, every organisation in the area of reproductive health will use that document."
>
> 030, national government staff

More recently, a Ministerial task team was set up to look at the issue of maternal mortality and included a wide range of members, including, "community TBAs, private transport unions and other members so like the Ghana

Broadcasting Corporation to look at health communication." (028, national government staff).

There are two annual events at which stakeholders come together with MoH and GHS decision-makers. One development partner staff explained their roles:

> "The first...is looking at the performance of the previous year. So for 2008 April we were looking at the performance of 2007, the full year, so there is always external reviewers, some coming from Ghana, others from outside Ghana, so they look at the whole health sector and then come up with a report and that report is discussed in the April Summit where the partners all meet to discuss it and the key issues that...come up, you know, are then put into an aide memoire...between donors and the government and they are the point of action, you know, in the year subsequently. And then...the November Summit is to look at the plans for the next year."
>
> 056, policy stakeholder

There were also regular meetings between senior sub-national and national GHS staff. Whilst not directly linked to policy development specifically, information would be disseminated both up, from the regions to the national level (and to other regions) as well as down, from the national to sub-national levels. Despite involving stakeholders through a number of procedures in several stages of national policy decision-making, it was clear that interviewees felt that in reality, there were only a small number of organisations and individuals who were influential.

> "...the discussions about policy in Ghana. It is a relatively small group of people from the Ministry of Health, maybe some people from Ghana Health Services and the development partners."
>
> 010, policy stakeholder

The MoH and GHS were considered the two key, central players in the process. Links with other relevant ministries (e.g. Women and Children's Affairs, or Education) were felt to be weak and were rarely named.

> "ah well first is the Ghana Health Service, of course, and the Ministry. Ghana Health Service is the implementing body but the same time they get the information for policy but they take it to the Ministry for policy-making maybe Ministry of Health. You know here you have the Ministry of Health and you have the Ghana Health Services, implementing services part is the Ghana Health Service and policy is the Ministry."
>
> 016, policy stakeholder

The United Nations organisations, specifically UNFPA, as well as WHO and UNICEF, were frequently mentioned. Perceptions of the influence of the development partners varied; USAID, the Dutch and DFID were mentioned most often. Those who felt the development partners were influential explained that they provided a lot of financial support. Those feeling that their influence had lessened described how Ghana's SWAp had reduced their power and influence. It is worth noting that the development partner most frequently mentioned with regards to maternal health and general influence in the health sector, USAID, had opted out of the SWAp.

"the development partners ...such as the DfID, the Netherlands Embassy, UN, USAIDS, I mean because the funding that it receives at the various sectors essentially a huge sum of it comes from the donor community and the donor decides where these money are channelled to. And so they play a very significant role and if they decide to go in a certain direction it can impact either positively or negatively on other sectors and so it's an issue of looking at the entirety of the health sector and see how resources could be made available to address all the issues holistically. So I think that they play a very significant role, yeah."

018, policy stakeholder

"in Ghana we have a reasonably consolidated SwAP er and...there is a health strategy which is somehow agreed upon jointly by partners and, and the government. I think there was...some need, let's call it need, or demand from [development partner] because, I mean, the whole SwAP dialogue takes place between the...donor finances and the government with his own finances and...so actually they [the development partners] relinquished quite a lot of power on the allocation of resources. But, er, in return they have a seat on the table in, in discussing the health sector policy. I mean that is what the SwAP is about. I mean the fear, though, is that er, this table is not er, a level playing field so to speak. Because of the disparity in information."

057, policy stakeholder

Ghanaian organisations mentioned as being involved in policy development included the Ghana Registered Midwives Association, the Nurses and Midwives Council, the National Population Council, Planned Parenthood Association of Ghana, the Christian Health Association of Ghana and private sector health facilities/providers.

Only a few people mentioned NGOs and local organisations with regards to policy influence. Others explicitly commented on the lack of organisations working in maternal health.

> "[*who do you think are the most influential people or organisations for maternal health in Ghana?*] For maternal health? Well, I think there are very little otherwise we wouldn't be in the situation we're in now."
>
> 010, policy stakeholder

Some noted that organisations involved in reproductive health tended to focus particularly on family planning, abortion or sexual health. The R3M consortium, which focused on these specific issues, seemed to be fairly well known. The Alliance for Reproductive Health Rights, a fairly new organisation, established in 2005, was mentioned more frequently in the later data collection period, with the suggestion that their involvement in policy debates had started to increase. They aim to promote a rights-based approach to sexual and reproductive health, though they reported particularly focusing on reproductive health (Alliance for Reproductive Health Rights, 2008).

3.2 Sub- and supra-national influences

3.2.1 Global influence

A number of interviewees felt that Ghanaian policies were greatly influenced by international agencies or global policy directions.

> "I think most of the maternal health things that we have in this country are globally directed or are induced from the global perspective."
>
> 039, GHS researcher

This was viewed in both a positive and a negative light. Some felt positively about the fact that Ghana attempted to reach 'international standards' by adopting global policies.

> "So I would say that, I would say that, if you look at maybe 90% of all the policies that we are implementing in this country, they are globally induced. But if you talk of antenatal care, all what they are doing there are research that has been done elsewhere and there's a global policy on it."
>
> 039, GHS researcher

However others felt it reflected a weakness, as Ghana was either forced or chose to adopt policies which either were unsuitable for the context or did not meet local needs. The issue of global influence was closely linked to perceptions of research use and will be discussed further in subsequent chapters.

> "I'll give you an example of the WHO one which...which we were forced to adapt but which I disagree. They did a multi-stud, -centre study on the utilisation of ANC services. When they came out that you need a minimum of four, visits. If you go into details of the country...there's no African country in it...when you look at it, you say, well it's a good idea for those countries. But...those conditions do not apply here. Especially not for our rural areas. So if you bring that thing here then you'll never be able to improve the quality..."
>
> 011, national government staff

3.2.2 Sub-national autonomy

Although global influence on policy was considered to be strong at the national level, at the regional and district levels there was generally felt to be a great degree of flexibility or autonomy in terms of the interpretation of

national policies into local actions. Some framed it in terms of needing to understand the local context in order to identify the most suitable implementation plan:

> "I think when policies come down they are generally outlined and they are general. But we, we need to look at our, the context of where we are working and look at how we can implement the policy so that it will achieve the impact it was...designed to achieve. So there's a, a quite a bit of room, not in changing the policy but in implementing it. There's not rigidity about implementing it if it's usually general in broad terms and then we have to bring it down to, if we're supposed to make sure that there are basic emergency obstetric care here, so how do we go about it? Then we have to now sit and think, what do we have for these things? Where are our gaps? How do we solve the gaps?"
>
> 064, sub-national government staff

HIRD was a good example of a national policy with local flexibility. A national government interviewee explained that the idea was that "depending on the particular area it could be sort of a change, I mean to, to suit the particular context" (058, national government staff). It appeared that some at the regional and district levels viewed HIRD as a general source of funds for maternal and child health work, rather than a defined programme of activities. This flexibility was often viewed positively, as the quote below shows.

> "But now the High Impact Rapid Delivery programme it just brings funds...which I think is wonderful. Nobody tells us the, it's just 'attain MDG 4&5', which is fine, it's also our priority; we want to cut down those deaths. But they don't box you in by telling you how to do it. Which unfortunately the programmes sometimes do."
>
> 024, sub-national government staff

However, as mentioned above, some were less positive about the implications of this flexibility. Some felt that the degree of flexibility accorded the programme was such that it was not always clear whether the initial nationally-selected interventions were still the focus at the sub-national level.

3.3 Summary: Maternal health decision-making

- Consultative procedures existed for policy development, although they did not always influence policy decisions
- The fee exemption policy was an example of an autocratic directive made by the President of Ghana, which took the health sector 'by surprise'
- Only a small number of actors were influential in policy, with the GHS and MoH playing powerful, central roles
- Attitudes towards the global influence on national policy varied, either being viewed as an imposition or reflecting the achievement of international standards.

4. The Context of Maternal Health Research Production in Ghana

Three main factors affecting the research production context are discussed below: who is producing the research, who is funding the research and who is setting the research agenda. Research dissemination is an additional factor with the production context that may influence research use or its perceived utility; this will be discussed after these three main factors. Maternal health research production in Ghana will then be described and the perceived maternal health research needed will be explored.

4.1 Research producers

Those conducting research in Ghana were not a homogenous group. Four main types of researcher were interviewed:

- Researchers based in Ghanaian universities
- Researchers conducting studies in Ghana but based in foreign universities
- Researchers in GHS health research centres (HRCs)
- Health professionals or NGO staff whose research was secondary to their main work.

A fifth type of research producer, Master of Public Health (MPH) students, was identified by a number of interviewees. These students conducted small studies during their practical attachments which were written up as their theses. Although no students were interviewed for this study, some interviewees did supervise these studies.

Researchers were interviewed from the University of Ghana in Accra and the Kwame Nkrumah University of Science and Technology (KNUST) in Kumasi. Both universities require staff to teach, conduct research and provide service. Two departments at the University of Ghana were considered particularly well linked to the MoH/GHS: the School of Public Health and the Noguchi Memorial Institute for Medical Research (hereafter referred to as 'Noguchi'). The School of Public Health was established in 1994 at "the insistence of the Minister" (051, university researcher), with the aim of providing training for district health managers (University of Ghana, 2009). Several government staff interviewees were honorary, part-time lecturers and, as mentioned above, some also supervised MPH students' research. Noguchi focuses on biomedical research on diseases of public health importance to Ghana and provides training and laboratory services for the MoH and GHS. Other departments in the University of Ghana that

work on public health issues include the Sociology Department, the Regional Institute for Population Studies, the Population Impact Project in the Geography Department and the Institute of Statistical, Social and Economic Research.

The GHS has four health research centres (HRCs) across the country; the Health Research Unit (HRU) in the capital, as well as one in each of the three 'ecological zones' in the north, middle and south of the country (Navrongo, Kintampo and Dodowa HRCs respectively) (Adjei and Gyapong, 1999). As well as conducting research, the three regional research centres are also demographic surveillance sites. At the time of data collection, the HRCs were located under the Policy, Planning, Monitoring and Evaluation (PPME) Division of the Ghana Health Service.

Plans were being developed to create a new Research and Development Division that would be separate from PPME. Few interviewees spontaneously offered views regarding the potential effects of this restructuring and only research institution directors or key government staff were specifically asked about their perspectives on this topic. Of those asked, opinions were split, however it was difficult to separate the views expressed from the interviewees' personal or professional motivations and interests.

The three regional HRCs had a remit to conduct research on diseases of public health importance within the ecological zone they were located in. Despite each zone covering several regions, each centre tended to work mainly within the district and region they were based in, with less research conducted in, or collaborative links forged with, the other regions and districts in the zone. For example, whilst one district director reported that the district health administration had links with the HRC located within its district, the director of the neighbouring district's health administration stated that,

> "the other side [a neighbouring district] a lot of studies have gone on but here seem to be virgin place for studies. Not much has been done here. But it's...because the centre, the research centre was in [name of district], okay. So most of the activities were done in that district. You know, you can't just cross into a different district like that, it takes a lot."
>
> 066, sub-national government staff

Although most of the research tended to be conducted in the district within which the HRC was located (or region, for larger studies), those producing this research often felt that their findings could be applicable to other districts or regions within the zone, or even elsewhere in Ghana or beyond.

> "because our mandate is the whole of the, the [name of ecological zone], I mean we try to spread it as wide as possible. But by and large, I mean, whatever is here, it's in the other places [laughs] yeah, yeah, yeah. I mean it's a small area geographically so it's not like there are really special problems in one opposed to the other. Unless, I mean, certain rare, certain conditions that very occasional, like guinea worm, which is just...[in one region] but not in these parts, you know. But we haven't started working on that yet, yeah...But because by and large certain diseases will be transcending the three ecological zones, you will find all of us [HRCs] working on, let's say, malaria, you know?"
>
> 038, GHS researcher

The quote above demonstrates that the issue of the local applicability/transferability is important not only for the use of research conducted in other countries, but also for sub-national research that may be of use in other districts or regions within Ghana. This will be explored further in subsequent chapters.

4.2 Research funding

Funding for research was considered a challenge or problem by many of those interviewed. Although the government paid salaries and some running costs for the universities and HRCs, it was widely accepted that they were unable to fund research directly. Occasionally small research projects may have been funded by the GHS or MoH, or through specific disease control programmes, but these were rare.

Research was funded through three main routes:

1. Funders sometimes commission or solicit research by approaching the researchers to conduct a specific piece of work
2. Researchers may develop a proposal for a study and then proactively seek funding for it
3. Funders may put out calls for proposals, with researchers reactively developing study plans to competitively bid for the work.

Research was also conducted without any specific funding. This was frequently the case for those whose research was secondary to their main work (e.g. hospital doctors), although some university researchers conducted such studies, generally using secondary data (e.g. Demographic and Health surveys).

GHS researchers tended to rely on a combination of all three routes, whilst academic researchers more often reported being commissioned to complete a particular study. The second funding route (seeking funding for a study proposal) seemed to be the least common or successful means of funding; several interviewees mentioned frustration or disappointment at not getting their proposals funded, particularly on maternal health topics.

> "A clear example is the proposal I was telling you about which was something the health system...for the region identified as something that

> they thought if...they had some information about could help them advance the, the cause of er, maternal mortality in the district. But because it is coming from them and nobody's interested, there's no money for, for it. So you go to the, you go to Accra, you go to Ministry of Health, they tell you there's no money, you go to Ghana Health Services, there's no money, oh, wait, we'll try and get you money and it's been lying down and gathering dust for the last three, three years."
>
> 039, GHS researcher

It is interesting to note that a director of one university department (which he felt did *not* do as much research as was expected of them) also observed that most of their research funding came from solicitation, rather than more proactive funding routes (e.g. calls for proposals). Although very understaffed for their teaching load, another reason suggested for their lack of research activity was the lack of incentives offered to academic researchers. Indeed he noted that although the university themselves held funds for research and dissemination activities, these were seldom used because there was a lack of incentive for academics to conduct research. There appeared to be a difference between university research centres and departments, with the former having greater autonomy which permitted the use of some incentives. For example it was possible to reduce staff teaching loads for those who successfully gained research funding that would require a substantial amount of their time, whereas those in university departments felt that the teaching loads were so high and staff shortages so pressing that it was not possible to be relieved of any teaching if funding for research were to be gained.

One GHS researcher noted that the type of funding may depend on the topic of the research study, with some frequently having calls for proposals. They explained that, whilst calls for proposals may not be put out for some issues, funders may still solicit or fund submitted proposals in these areas.

Unlike solicited research, the second and third routes involve some degree of competition. Despite requiring constant work to identify and apply for new funding, competitive bidding was generally viewed positively. The director of one university department explained that a funding crisis (experienced when a major funder who had frequently solicited research stopped doing so) may not have occurred had the department been used to competitively bidding for funds from a number of different sources. Another director also expressed a desire for more opportunities to competitively bid for research funds.

4.2.1 Changes in the research funding situation

Although some felt that research funding had always been a difficult issue, others felt the situation had changed in the last decade. A few interviewees felt that at the international level, or for certain topic areas (e.g. malaria), funding had increased. The arrival of The Bill and Melinda Gates Foundation and changes in the funding priorities of the Wellcome Trust were noted by one international research organisation's director as boosting funding income dramatically in the last decade.

One district director felt that, whilst in the past it would have been possible to use their own funds to conduct research, this was now a problem. It was frequently acknowledged that the lack of resources for the health sector in general meant that the funding of research was not possible.

> "But then the problem now is resource for research because as I speak to you, we don't even have resource to run administrative things, okay. So you can't say you are going into research when you don't even have enough...money to maintain your vehicle"
>
> 066, sub-national government staff

The move to non-earmarked donor funding also had implications for research funding. One development partner staff noted that whilst they had

previously had earmarked funds for research, they no longer funded research themselves. Some held negative views of the future of health research funding:

> "Unless one way or the other we are able to ring-fence some more money from the government that in itself...at the comprehensive level of the government resources it's going to be, it's going to be very difficult, so. Unless something happens...research funding is going to be squeezed out"
>
> 020, national government staff

Others noted the fragility of research funding, explaining that in difficult times it tends to be one of the first areas to be cut.

> "I think that um, often times when, when budgets are getting slashed, you know, research budgets are sometimes the first to get slashed"
>
> 004, policy stakeholder

4.2.2 Research funders

Major funders of health research in Ghana include The Bill and Melinda Gates Foundation, the Wellcome Trust, WHO, DFID, the Dutch government, UNFPA, the Global Alliance for Vaccines and Immunisation (GAVI), the Special Programme for Research and Training in Tropical Diseases (TDR), and the Global Fund to fight AIDS, Tuberculosis and Malaria. The Dutch government provided funds for a unique research programme, the Ghanaian-Dutch Collaboration for Health Research and Development, which began in 2001[13] (Ghanaian-Dutch Collaboration for Health Research and Development: Final Dissemination Forum, 2008).

[13] Although initially planned as a five-year programme, it was extended for another three years, without additional funding, possibly due to under-spending.

Hailed as "a paradigm shift" [p4], this partnership between researchers and policy-makers in a high and a low income country aimed to produce research that was collaborative and demand-driven, whilst building research capacity (Gyapong and Ofori-Adjei, 2008). As a national level government interviewee explained, it aimed to fund "research that will feed into direct service delivery at various levels" (050, national government staff).

A key feature of the programme was the flexibility of its funding, enabling those wishing to conduct research (including academics, health professionals and health managers) to submit proposals according to broad research priorities ("Ghana-Netherlands Health Research for Development Programme. Demand Driven Research Partnership Programmes,"). One national government staff member described it as saying, "we'll give the money for the kind of research agenda that you will set up" (020, national government staff). The programme also aimed to support the development of research management capacity and research infrastructure development (e.g. establishing an ethics committee, developing structures and protocols for managing proposal submissions and installing financial mechanisms). Dissemination conferences were held and a booklet of abstracts published (Ghanaian-Dutch Collaboration for Health Research and Development: Final Dissemination Forum, 2008). Beyond this, the strategies for disseminating individual study reports appeared to depend on the individual researcher, although a small number were published on the programme's website (Ghana-Netherlands Health Research for Development Programme).

4.2.3 Government funding for research

At the High Level Ministerial Meeting on Health Research (held in Accra in 2006) and the more recent meeting in Bamako in 2008, health ministers agreed to commit two percent of their health budget to research and research capacity strengthening ("The Bamako Call for Action on Research

for Health. Strengthening research for health, development, and equity ", 2008). Some interviewees reported that Ghana had promised to commit five percent to research and development. Although it was acknowledged by both government and non-governmental interviewees that this two percent commitment had not been reached, one government official felt that, since the meeting in Accra in 2006, there has been some awareness of the need to fund research. Others also recognised that the government had accepted this as a goal, albeit not yet achieved.

> "...the introduction of this idea [of earmarking two percent of the health budget for research] which the government seems to have embraced but not implemented..."
>
> 038, GHS researcher

A national government interviewee considered the recent creation of a budget line for research to be an important step for research funding, although the funds allocated to it were minimal. No other interviewees mentioned this development, though it is not known whether this was due to lack of knowledge or because of a lack of importance assigned to it. The proposed new research and development division was also expected by some to aid the mobilisation of internal resources. The challenges of achieving two or five percent were recognised; some noting that the government had been able to raise these funds but that they were then used for something else. Another interviewee (previously cited) pointed out the difficulties of ring-fencing money for research when there were not enough funds for health service delivery itself.

> "we put aside five percent of the, it was ambitious, Ghana Health Service budget. Five percent was put aside for research...At the first sign of stress, the money was used for something else and not research. We never got it."
>
> 052, national government staff

Although currently unrealised, interviewees were overwhelmingly positive about the potential impact that committing two percent of the health budget for research would have. Views varied as to how the funds could or should be spent, however all agreed that it would make a positive difference. Some considered the impact that additional resources would have on the research community. Others recognised the benefits for government research users, who would be able to commission studies, or that it would create opportunities for researchers and policy-makers to discuss the research agenda together.

4.3 Research agenda

Some GHS researchers mentioned the development of organisation-wide research agendas, although these were not always current. Research agendas were not generally in place in the university departments interviewed. Some university department directors felt a set research agenda would be detrimental, as staff should be able to pursue their own interests both for the purpose of academic freedom and to allow the flexible development of the department.

GHS researchers explained that their institutional research agendas were based on the GHS five-year programme of work, although they also attempted to integrate communities' felt needs and some international interests. This provided a framework for seeking and selecting funds.

> "you should have what you want to work on as a start and then also look at what there is money to fund, you know. So that becomes secondary...So it's not like, there's money for this so you go in for that, no. First, what do you want to look at and then, is there money for any of them. And then you tend to go towards the ones that have money, whilst you try to search for money for those who still haven't gotten any"
>
> 038, GHS researcher

Among university researchers, studies were generally chosen according to the interests of the individual, with some influenced by previous research or data, perceived research gaps, or through approaches from collaborators or funders. Solicitation was also mentioned by GHS researchers. In addition, they noted examples where previous studies or data led to research projects, or when proposals were developed in response to a funding call.

Those conducting research as a secondary activity to their main job tended to select studies informally, either by identifying their own interests or concerns, or through discussion with colleagues.

4.3.1 Government research agenda

The process of developing the government's first health research agenda was underway in 2008, with a draft published in early 2009 (Ministry of Health (MoH) [Ghana], 2009b). A national government interviewee explained that extensive consultation with policy-makers had taken place prior to the development of the draft agenda, which drew heavily on the MoH's Programme of Work. They explained that the draft agenda would then be circulated for wider internal consultation (including with the GHS HRCs, who had been explicitly excluded from the earlier consultation).

> "We didn't talk to researchers because we felt that...we didn't need to...because they are going to do the research anyway...We, we didn't want to introduce any kind of bias, you know, in terms of trying to talk to them and for them to um, influence the way, what the gaps are and the way we should go."
>
> 052, national government staff

It was hoped that a clear research agenda, as well as a strong research production system, would encourage the mobilisation of funds from both the Government of Ghana and development partners, through earmarked funds.

4.3.2 Agenda challenges

The main challenge for research agendas in Ghana was widely recognised to be the lack of research funding generated in-country. It was accepted that this limited the degree to which the government could influence the types of research conducted or their topic foci, as the two researchers quoted below explain:

> "The problem is that the, the government doesn't fund research so while the, some of the people in the Ministry will want us to address specific questions, they don't have resources to call the shots"
>
> 051, university researcher

> "If you don't have control over resources, then definitely you have to dance to the tune of the person who's asking you to work for him."
>
> 039, GHS researcher

Whilst generally researchers emphasised that they did try to accept funding only for studies they felt were 'relevant', they agreed that funders did exert

a strong influence over which studies were conducted. Funders were felt to have clear agendas for research which, although overlapping to some extent with local priorities, left gaps in certain areas of interest. Some commented on the tension between doing what the government felt was useful and what was useful either internationally, for global policy or knowledge, or 'futuristically', for example by testing the efficacy of new vaccines. This led to studies being funded which were not considered useful or relevant to Ghanaian policy-makers.

> "But you see most of the time what happens is that...London School of Hygiene and Tropical Medicine has an idea and then they come to Kintampo and it's done and they say it's a seven country study, so even if Ghana doesn't need it, Burkina will need it, you know? So those are the things, because we are really not funding our own research we also have very little role in initiating, the research question. Even though they come to you and make you look like you are part of it... but they already know what they want to study and because [the researchers]...also have resource constraints, they also take it, so they can pay their people. And so at the end of the day you realise that some of them may not be user-friendly for the country or it is not something you can adapt or it may take too long to even implement because of the obstacles that have been overlooked"
>
> 011, national government staff

4.4 Dissemination

University researchers reported using a range of methods to disseminate findings, including publications, dissemination seminars, national and international conferences, as well as through the media and seminars or for meetings with government decision-makers. The nature of the activities varied from project to project, often seeming to depend on the study, its

collaborating partners and budget. Large studies with external collaborators, such as IMMPACT[14], utilised a number of methods, whilst those conducting smaller studies with little funds were more likely to report disseminating via an academic conference presentation or journal article only, if they did any dissemination at all.

Dissemination seminars were held for some individual studies, particularly larger ones, or findings were presented at annual events arranged by university departments or health/professional associations. National and international conferences were also mentioned, the latter more frequently.

HRC interviewees described dissemination strategies that targeted a range of audiences. Dissemination events were held at the community level, either at community meetings or by inviting opinion leaders, chiefs and elders to district-wide dissemination events. Seminars or workshops were held for some studies to feed results back to those that the researchers had worked with at the district or regional level. Depending on the study's funding, national level dissemination events may have also been held in the capital. Peer-reviewed journal articles may have been published and presentations given at national and international conferences. An annual dissemination meeting held by the HRU was noted as one dissemination opportunity for the reporting of numerous studies' findings, with both programme staff and policy-makers invited. Some noted that the maternal health studies that they had worked on had not been actively disseminated in the way that larger studies, such as the Community Health and Family Planning (CHFP) study, were. This may be associated with the size and budget of the study.

Those whose research was secondary to their main role (e.g. health professionals or NGO staff) seemed to disseminate less and often lacked

[14] IMMPACT was a "global research initiative" [p2] based at the University of Aberdeen, UK, which conducted collaborative studies on maternal mortality and involved both high and low income researchers from a number of institutions (IMMPACT, 2008). Its collaborators in Ghana were based in Noguchi; studies were also conducted in four other low and middle income countries (Burkina Faso, Indonesia, Senegal and Nicaragua).

clear dissemination strategies. Their studies tended to be smaller and had fewer resources to enable dissemination. Some mentioned that their main method of dissemination involved simply sending a copy of the project report to those who had funded the study. The interviewee quoted below explained that they had planned to print and distribute a large number of copies of a project report, before their study's funder withdrew the offer to pay for this, resulting in only a small number being printed.

> "[*How would you disseminate your findings?*] Fairly informally and unofficially, really. We'd print copies and we'd have them at the centre. We'd tell the people about them, that we had them, so if they wanted them they could have copies. That was basically really it, and then talking about it sort of, if there were meetings, if, we belong to a health network meetings. So sort of talking about stuff that we're finding out."
>
> 070, policy stakeholder

A few interviewees lamented the fact that MPH students did not always disseminate the findings from their theses back to individuals in the districts that they had conducted their research in.

4.5 Maternal health research

Interviewees were asked about the maternal health research that they were involved in. Appendix 6 presents an overview of these studies, as well as other studies identified from documents obtained during fieldwork. Although not comprehensive (indeed, one interviewee noted the lack of, and need for, a centralised database of all health research conducted in Ghana), it does provide some insights into the types of maternal health research conducted. The studies have been categorised according to the type of

policy decisions they could inform, based on the three main 'stages' of the policy process (Lavis, 2009):

1. Defining health problems
2. Assessing potential policy and programme options
3. Identifying implementation considerations

4.5.1 Defining health problems

Studies that defined maternal health problems were the most common type of research mentioned in the interviews. These explored the nature, cause and prevalence of maternal health problems and included studies of the prevalence of risk factors as well as studies exploring knowledge, attitudes and practices relating to health behaviours and health service use.

The reason why this type of question was the most commonly answered by studies may be due, at least in part, to the fact that it covers a wide range of study designs, from national surveys to secondary data analyses as well as qualitative studies. It is also worth noting that secondary analysis and small surveys or qualitative studies may be relatively cheap to conduct, making them easier to complete and therefore more likely to be conducted. This category also includes the large, repeated national Demographic and Health Surveys, conducted every five years and funded by USAID (Ghana Statistical Service (GSS) et al., 2004).

Two ongoing studies exploring the nature of maternal health problems were identified. One was investigating associations between poverty and maternal care and was conducted in collaboration with the University of Southampton, with funding from DFID and the ESRC. The other was exploring cultural factors that influenced non-use of delivery care services in one region and was conducted by the University of Ghana with funding from Norwegian Agency for Development Cooperation (NORAD).

Two completed studies were identified that calculated the size of maternal health problems. A national survey to estimate the maternal mortality ratio was published in 2009 (after data collection for the current study had been completed) (Ghana Statistical Service (GSS) et al., 2009). A previous maternal mortality survey was also mentioned by one interviewee, although this was not national.

4.5.2 Assessing potential policy and programme options

The least common type of studies was those assessing policy or programme options. This may be related to their relative cost or difficulties in conducting such research. However, as will be discussed in more detail in the following chapter, they may also be less common because this type was not valued as highly as the other two types of studies.

One ongoing study was identified that explored the effect of vitamin A supplementation of women of reproductive age on maternal mortality. This was a large, ongoing RCT funded by DFID and conducted by Kintampo HRC, with LSHTM collaboration. Two completed studies were identified. One of these evaluated the previous policy of fee exemptions for delivery care and the other was a pilot study of life-saving skills training for nurse-midwives.

4.5.3 Identifying implementation considerations

A number of studies looked at policy implementation or programme improvement and included situation analyses, studies of quality of care and perceptions of policies and services. Reports from most of these studies could not be obtained; identification occurred through the interviews. This has clear implications for their dissemination and potential use, although it is not know whether or how they were disseminated at the time, when the studies were completed. Two national studies which did have publicly

available reports looked at the acceptability and feasibility of introducing the WHO focused antenatal care package and reported on a national survey of active management of the third stage of labour in health care facilities (Nyarko et al., 2006; Rational Pharmaceutical Management (RPM) Plus Program, 2008). It is interesting to note that no ongoing studies were identified.

4.6 Maternal health research funding

Although information on the amount of funding provided by donors was not gathered, from appendix 5 it appears that the most prolific donors for maternal health research in Ghana were DFID and USAID, followed by UNFPA and the World Bank. DFID seem to prefer to fund large studies with collaborators from high income countries, whilst USAID lean towards funding national surveys and UNFPA tend to fund smaller studies conducted by NGOs and other local organisations.

In comparison to other areas, such as malaria, there did not appear to be many maternal health studies in Ghana. Although interviewees were informed of the study's maternal health focus prior to the interview, many provided examples of research production or use from other topic areas, such as HIV/AIDS, child health or malaria. This may have been partly because their roles were broader than maternal health – either focusing on reproductive and child health or public health in general. However it also seemed to relate in part to a lack of maternal health examples on which to draw. When maternal health research was discussed, a number of interviewees mentioned studies focusing on abortion and family planning. These seemed to be more frequent than studies with a focus on pregnancy, childbirth and the postnatal period.

Funding of maternal health research was felt to be particularly difficult. Several interviewees mentioned maternal health research proposals that they had written for which they had been unable to find funding. Maternal

health studies in Ghana tended to be either small scale, requiring no funds or utilising students to conduct the research, or very large scale and in collaboration with partners from high income countries. Occasionally studies were linked to other topic areas which received more funding, such as malaria. For example, an implementation-focused study of malaria prophylaxis provision in antenatal care (looking at why women were not receiving complete three-dose courses) was funded by the national Malaria Control Programme. One district director explained that funding maternal health research was difficult compared to other areas:

> "yeah, it's not that easy. In fact, unless it hinges on another programme like maternal health hinging on malaria...that one you would but, directly, no. I don't think we've received any funding for anything directly in maternal health, no"
>
> 064, sub-national government staff

> "So you see that basically, most of the work that has been done on maternal health in this country is either a donor-driven activity, it's not something that people actually sit down and say that this is the key thing that we think is a problem here and that we should investigate."
>
> 039, GHS researcher

4.7 Maternal health research needed

When asked what maternal health research was needed, or lacking, in Ghana, a few topics were frequently mentioned. Several wished to explore the reasons behind the non-use of delivery services, or the gap between antenatal and delivery coverage rates. Reasons for the non-use of family

planning and calculating an accurate maternal mortality ratio were also desired.

> "[*in terms of maternal health research, do you think there are any types of research that are lacking or needed for Ghana?*] the type of research will, will involved the socio-cultural dynamics of why, what prevents people from delivering in, in the facilities. That will definitely be one aspect of that, the disparity between the high ANCs and the low deliveries."
>
> 058, national government staff

> "[*are there any types of studies that you think are needed in Ghana, that are lacking?*] well you see we have to do a proper maternal mortality study. You see that there are conflicting figures, depending on who did it or which methodology or whatever so I think but I hear there's something on the way. That is very, very important for us to know exactly what is the maternal mortality ratio in our country. I think that is number one."
>
> 054, sub-national government staff

Most types of studies were suggested, from the size and nature of the problem to studies exploring policy implementation and improvement strategies. Most interviewees tended to focus on the nature of the problem, with some specifically mentioning the need for qualitative research, or studies exploring reasons, beliefs, attitudes and socio-cultural perspectives. Although some mentioned the need for monitoring and evaluation, the exact meaning of 'evaluation' was not always clear. It often seemed to refer to assessing the implementation of projects and policies, rather than effectiveness. The interviewees' conceptualisations of research will be discussed further in the following chapter.

Some pointed out that for maternal health the direct interventions required were generally known, but research was needed to explore how best to implement them or encourage their widespread use. Several expressed a desire to evaluate the effectiveness of government policies and strategies, specifically the fee exemption policy; some also wished to examine their implementation.

> "the issue is that we have this problem with deploying these interventions...[they] are not reaching the people. So that is the kind of research we need. Why is it not working in region A, B and C? Based on that evidence, you can change the strategy and you can improve what we have. So generally across our public health system, that kind of research is required. If we can do that well, we will improve on delivering this known and effective interventions."
>
> 051, academic researcher

4.8 Summary: Research context

- Ghana has a range of research producers, including university researchers, staff at GHS HRCs, health professionals, NGO staff, and MPH students
- Research funding was considered to be a major challenge
- There were three main funding routes: solicitation by funders, development of research proposals which researchers sought funds for it, or calls for proposals from funders
- The government's aim to ring-fence two percent of the health budget for research was viewed positively in theory, although it had not yet been achieved

- Research funding and agenda setting were recognised as being strongly linked, such that the government had limited influence on research agendas
- Dissemination efforts reported by both university and GHS researchers varied by study, particularly relating to study size, budget and collaboration
- A range of study types had been conducted on maternal health in Ghana, though most focused on defining maternal health problems, or considering implementation issues of policies and programmes. Fewer studies had been conducted to assess policy and programme options
- Funding was viewed to be a particular problem for maternal health

5. Discussion: Maternal Health Policy and Research Contexts

This chapter described the context of maternal health decision-making and research production in Ghana. These findings will now be discussed in relation to the three contexts detailed in the conceptual framework (the internal and external decision-making contexts and the research context), with particular attention to their implications for research use.

5.1 Internal decision-making context

As described in the conceptual framework, the internal decision-making context comprises the type of decision being made, the process of decision-making and the stakeholders involved.

Maternal health decisions were described as complex, with numerous challenges faced. Policy and programmes could target a range of different areas, such as health sector issues, the beliefs and behaviours of the population, or factors outside of the health system (e.g. road networks).

The nature of the decision-making topic has been noted to affect the extent that research is used as well as how it is used in decisions. For example, Reichenbach explored the factors that led to more political attention being paid to breast cancer than to cervical cancer in Ghana, despite scientific and economic evidence suggesting that the latter should be prioritised (Reichenbach, 2002). When topics are controversial or emotive, beliefs and values are often felt to play a stronger role in decisions than research evidence, as compared to more technocratic decisions. Where research is used in such decisions, it has been argued that this use is likely to be more selective, backing up value-based arguments, rather than involving a more objective and comprehensive review of research to inform decisions (Weiss, 2001). Although many aspects of maternal health were not portrayed as controversial or emotive, strong and opposing views were associated with certain issues (e.g. abortion services and TBA training). For these areas the likelihood of selective research use may be greater. As will be seen in the following chapters, the training of TBAs presents a clear example of how perceptions of research may vary when the topic is controversial.

National level government staff consulted regularly with stakeholders, holding two annual health sector review meetings. There were also regular meetings with sub-national GHS staff. The National Reproductive Health Policy involved consultation with stakeholders, following the official procedure for policy developments in health. However despite these efforts only a small number of stakeholders were felt to be influential in developing maternal health policy. The MoH and GHS were recognised as being the most influential organisations. This suggests that their attitudes to and capacity for research use in decision-making will be important. Whilst not

necessarily having a direct effect on research use, having only a limited number of influential actors may reduce the opportunities for dissent, debate and the introduction of alternative research findings into policy discussions. Although it could limit the introduction and discussion of research, the opportunities for consultation suggests that the MoH/GHS have an interest in hearing new views, ideas, experiences and evidence. This could imply an openness to research use among those with policy influence.

The announcement of the fee exemption policy, which was an autocratic, presidential directive, suggests that decision-making was not always as consultative as the procedures described. Policy-making in this manner would have implications for research use. Those making decisions without consultation or formal procedures may be more likely to either disregard research findings completely, or may utilise them in a particularly selective manner. It is also less likely that efforts to encourage research use would be successful in addressing such forms of decision-making.

The flexibility in the interpretation and implementation of national policies at the sub-national level also presents implications for research use. The fact that even when national policies are informed by research, they may not necessarily be informed by research at the sub-national level leads to two key conclusions. Firstly, it is important to consider research use not only during policy development but also at the implementation stages of the policy process. Secondly, it is clear that there is scope for research use at the sub-national level. Therefore perceptions held by sub-national government staff regarding the use, usefulness and local applicability/transferability of research are important to consider alongside those at the national level. Those hoping to encourage research use should not focus solely on national levels, but should recognise the need to target sub-national government staff as well.

5.2 External decision-making context

The external decision-making context includes factors that may affect the implementation and impact of programmes and policies. The Ghanaian health service is decentralised, with a substantial degree of autonomy at sub-national levels that allows flexibility in the interpretation and implementation of national programmes and policies. Nevertheless it seemed clear that many interviewees were aware of and followed global trends, for example citing the MDGs, or linking neonatal health with maternal health (The Partnership for Maternal Neonatal and Child Health, 2010). Many felt that global policies and international organisations had a strong influence on Ghanaian policies. In this respect, the extent that global policies are evidence-based and the research use by international organisations could affect research use within Ghanaian policies.

Attitudes towards global influences on national policy varied from positive to negative views. Such external influence could affect research use in a number of ways. One the one hand, if a global policy is itself informed by research evidence and is adopted in Ghana, Ghanaian policy will also therefore be based on research. On the other hand, the evidence used at a global level may not be considered applicable/transferable to the Ghanaian context. Understanding perceptions of local applicability/transferability of research could therefore be of importance in these situations, not only for national and sub-national decision-makers but for those at the international level as well.

From another perspective, global policy influence could be viewed as potentially inhibiting opportunities for research use at the national level. Where national policy is based on global policies and international guidance, national government staff's own perceived need for and motivation to use research themselves may be limited.

5.3 Research context

There were a range of producers of research in Ghana; some more closely linked with decision-makers than others. Variations in how the different types of research producers go about conducting research (including how they set their research agendas, find funding, collaborate and disseminate their findings) may affect the perceived use and usefulness of their studies. For this reason it is important to examine these aspects of research production, which can then form a basis to inform the findings in the following two chapters (looking at research use and usefulness and local applicability/transferability respectively).

There were three sub-national HRCs, however they rarely worked outside the district or region within which they were located, despite having a wider official remit. It is clear that there is great potential for increasing the use of sub-national research beyond the original study setting, particularly given that there were clear gaps in maternal health research production. This, combined with GHS researchers' belief that their research could be of use beyond the initial study sites, highlights the importance of understanding local applicability/transferability. Not only would it help to enable increased *appropriate* use of research from other countries, it could also maximise the appropriate use of sub-national research conducted in other areas within Ghana.

Where thorough and comprehensive dissemination is planned, it could be assumed that researchers are hoping or expecting their findings to be made use of in policy and/or programme decisions. Studies which were disseminated less may therefore be expected to have less influence. GHS researchers tended to report the more comprehensive dissemination efforts[15] (particularly for large, high profile, collaborative trials) than academic researchers, with non-researchers reporting even less

[15] Indeed, some could argue that these were more comprehensive and ethical than those employed by many studies conducted in high income countries

dissemination. Whether research use patterns reflected that of dissemination will be explored further in the following chapters.

The fact that most funding came from outside the country affected who was involved in setting the research agenda and how this was done. The hope of increased research funding from the Ghanaian government, the development of a government research agenda and newly created Research and Development Division of the GHS may affect research production in the future, which may have implications for its use and perceived usefulness. However at present, there were clear gaps in the types of maternal health research produced and several identified research needs in this field.

5.4 Issues arising

Government staff, policy stakeholders and researchers have varying roles in both the decision-making and research contexts. These differences may affect their perceptions of local applicability/transferability. The usefulness and use of research may also vary according to the type of study or research producer; this will also be explored in the following chapter. The fact that there were only a limited number of maternal health studies implies that, if research were to be used, decision-makers may need to draw on studies from elsewhere. This would have implications not only for perceptions of the use and usefulness of foreign research but also for perceptions of local applicability/transferability. These issues may also have implications for the international policy community, the evidence-based movement, as well as research producers and decision-makers within Ghana. These will be considered in the following chapters.

One could conclude that there is little 'essential national health research' on maternal health that has close ties with Ghanaian decision-makers. This has implications for the use of Ghanaian research in maternal health policy (the scope of which would be greater if more Ghanaian research existed)

as well as the use of foreign research (which may be relied on more than would be the case if Ghanaian studies had been conducted). It is clear that there will remain an unmet need for research that could potentially be addressed through the use of foreign and international research. For this reason there will remain a need to understand issues of local applicability/transferability.

The descriptions of the decision-making and research contexts in Ghana generate questions about perceptions of research use and usefulness which will be considered in the following chapters. A range of international, national and sub-national government and non-governmental actors are important in developing and implementing policies and programmes. There is therefore scope for all of these actors to use research in their own decision-making. The next chapter will explore whether perceptions of research use and the perceived usefulness of research vary between these groups.

Chapter 4:
The Perceived Use and Usefulness of Research

1. Introduction

This chapter explores perceptions of the use and usefulness of research for policy and programmes. First, conceptualisations of research will be discussed, before considering attitudes to and interpretations of the evidence-based movement. The types of research studies that interviewees considered to be useful will be examined, then the extent to which decision-makers were aware of research, as well as the routes through which research reached them, will be discussed. The degree to which research was perceived to be used will then be explored, with particular consideration paid to differences in responses from various types of interviewees. Finally, the perceived role and importance of foreign research (i.e. research conducted outside of Ghana) will be examined.

2. Definitions of Research

The way in which the concepts of research, evidence and 'evidence-based' were interpreted appeared to differ to those generally accepted by the international evidence-based movement. The concept of research was broad for many interviewees, incorporating routine data, Ghana Health Service (GHS) reports (e.g. quarterly reports on tuberculosis) and even informally talking to people or observing.

> "But health promotion is not so much interested in the scientific and big researches...no, just observing, looking through materials, reports that come to you...like reports, reports, monthly, quarterly reports...So, from national level they say evidence-based health promotion...you base your evidence on, rightly on research. So that is, that is how it is. I try as much as possible to, to do a bit of table research or observation or even talking to people."
>
> 037, sub-national government staff

The quote above exemplifies how, despite the use of the term 'evidence-based', its interpretation differed widely from the narrower concept employed by the evidence-based movement. In explicitly stating that "you base your evidence on, rightly on research", they reject the implicit assumption made by many in the international evidence-based movement that 'evidence' refers solely to rigorous, scientific research. They then clarify the types of methods they would use as research, describing unstructured or informal activities that would not be included in the movement's narrower definition.

As will be discussed in greater detail later in the chapter, operations research was highly valued by interviewees. However their definitions of operations or operational research (the terms appeared to be interchangeable) often seemed somewhat vague. Some used the term to refer to any study that was 'applied' or relevant to policy or programming (as in the first quote below); others used it to describe small, qualitative or 'informal' studies (as the second quote below shows).

> "when you say operational studies, it's basically studies to answer things, er, questions that we have as part of our work. As we do our work, questions, so if it requires a qualitative study to do that, we do it...if what we are, what, what we need to do, we need to do an

intervention study, we do it. So I wouldn't say one type of study. I'd put all of that into an operational. Anything that will answer the questions because we do not do research for doings sake"

064, sub-national government staff

"I don't need a big research, I just need to go and talk to the community people and once I get those results, I will use that to improve and make sure people come to the facilities. So those are the minor operational research that, for me, at this stage, are very useful."

036, sub-national government staff

By probing interviewees about the meaning they ascribed to operations research (or research in general), it became clear that most interviewees dichotomised research into two broad categories. The main distinction was between academic research and operations research (although this was a conceptual distinction, since some academics did conduct operations research). The latter was considered to be more applied, with direct relevance to health service delivery or programmatic issues. Operations research was often considered to be smaller scale, quicker and with less rigorous methods.

"[*and can I just ask you what you mean by operations research?*] oh, policy-oriented research...It's different from academic work, when you're writing academic paper, you have to argue from a theoretical perspective and all those stuff, you know. Policy-makers are not interested in that. What is the problem? How did you do it? What are your findings? What suggestions do you make for addressing this problem, that's operational research."

047, academic researcher

Many referred to 'big' and 'small' studies to distinguish these two types. 'Small' research was highly valued, because these studies tended to focus on issues pertinent to programmes or services and produced findings in a short amount of time. 'Big' research studies were not always considered necessary for decisions.

> "research is very important to us and when there is anything and we want it to be evidence-based we, we look for, we'll be looking for money but we don't wait for the money to do a big time research. Sometimes you can do something small."
>
> 059, national government staff

Research as a whole was also conceptualised by some as something that is applied, whose inherent purpose is to improve health or health services. Whilst a few felt that the methods used defined research, more took a broader view, considering routine data, or anything that was done to understand a situation (e.g. talking to people) to be 'research'.

> "So for me research is not just the normal research that we know, the academic way of doing it, I mean, the administrative way of looking at it is also good. It's research, it helps and as a programme manager I am always looking out for those opportunity, yes, I mean, to use those as a basis, you know, for coming up with interventions, yes. And also even to reassure me that whatever interventions you are putting in place are okay, they are right."
>
> 032, national government staff

Whilst some acknowledged that routine data may not be considered 'research', many implicitly incorporated it into their conceptualisation, referring to its usefulness when asked about research.

"[*to what extent do you think that national maternal health policies and practice is based on current research findings?*]
I know that the district health facilities, district report to the region, we also report to national and national looks at the data. They hold review meetings where people discuss and share experiences and what I know is that as, when issues come up, or there are problems or challenges, they come at, come up at these meetings and fora et cetera and national takes these things and considers. So much of what we are doing I know is based on, on evidence from the ground."

060, sub-national government staff

2.1 Summary: Definitions of research

- The concepts of research and 'evidence-based' appeared to differ to those generally accepted by the evidence-based movement
- Research was a broad concept for many interviewees
- Operations research was highly valued, though definitions were often vague
- Research was dichotomised into two broad categories: 'big', formal, academic research and 'small', applied, operations research
- 'Small research' was highly valued, due to its speedy completion and its focus on topics pertinent to service delivery; big research was not always considered necessary
- Some conceptualised research as something that by its nature was applied, having the inherent aim of improving health or health services

3. What Research is Useful?

National and sub-national government staff felt that research use in policy was very important. Research was considered to be useful for policies, programmes and practice and it seemed that it was becoming an increasingly explicit ideal.

> "I was reading a document recently, and exactly that was the recommendation that in future, every policy that they want to set up or implement, there must be an operational research as part of it. So that as the policy is being implemented, research is going on to find out what problems that are going to emerge."
>
> 029, sub-national government staff

There appeared to be quite a degree of buy-in to the concept of 'evidence-based' policies and programmes among national and sub-national government staff. Several interviewees used the terms 'evidence' and 'evidence-based' in response to questions about research use.

> "We, Ghana Health Service we pride in, we have pride in saying that we, we do evidence-based things."
>
> 059, national government staff

The fact that some interviewees used terminology commonly employed by those within the international evidence-based movement suggests that they had some awareness of the movement and its main philosophy and concepts. Several used phrases which are commonly associated with particular research use models. For example, some referred to 'gaps' between research and policy or 'bridges' between researchers and policy-makers, which are terms usually associated with the 'two communities' model of research use. In explaining that research would 'trickle' or 'permeate' into policy, interviewees borrowed terms from the enlightenment

model of research use. A few interviewees modified these accepted terms and phrases, (e.g. "evidence-based research"), suggesting a possible misunderstanding of the original concepts.

A range of types of research were considered to be useful for decision-making. Some explicitly noted that different types of research would be of use to different types of research users (e.g. policy-makers and health professionals), or to answer different types of questions.

> "...research is in various areas. Sometimes it has to do practice-based research. So for practice-based research for example is very good for the front-liners who are there. But when things that have to do with taking a policy on how you want to do your programmes, policy-makers, so, so it's both ways, depending on the type of research."
>
> 007, national government staff

High Impact Rapid Delivery (HIRD) exemplifies how there may be different types of research use at different 'levels' of the policy. As the quote below explains, the overall strategic aims of the policy had been set at the national level.

> "high impact meaning there are cost-effective interventions which are known, which have been tested, I mean we are not going to test it again, that they are known, the efficacy is already there, if you are testing it probably in terms of strategies and other things."
>
> 058, national government staff

However the specific policy objectives are selected at the sub-national level. Whilst at the national level the policy was felt to be based on more formal or 'big' research, at the sub-national level (when deciding how to interpret HIRD's strategic policy aims), 'small' research such as routine data

appeared to be the most used form of information on which local action plans were developed.

> "[*ok because I'd be interested to understand how you decide which, which aspects of HIRD you focus on*]
>
> It's really coming out of the data. It's pretty straightforward. I mean MDG[16] 4 says reduce by, is it, two thirds. You know, child deaths. MDG 5 says reduce by three-quarters maternal deaths. Yeah. So basically it's, like I said, already we had looked at why were the women dying, where were they dying. We had all that data and we found, if I can summarise...it was the usual suspects of haemorrhage, of you know pregnancy-induced hypertension, sepsis, the usual things, the usual delays at home..."
>
> 024, sub-national government staff

The types of research considered used or useful will now be discussed, categorised according to the three policy questions[17] conceptualised in the previous chapter (with the most useful presented first). Although these conceptualisations were not used in the interviews themselves, it is useful to frame the perceived value of research in terms of these questions, since one type of research may potentially be used in a number of different ways, but not all of these ways may actually be perceived to be useful or used in reality.

Of the three types of policy question, research aiming to inform 'implementation' decisions was by far the most valued, followed by research that informed the definition of the problem. Research that could

[16] Millennium Development Goal (MDG) 4 focuses on child health; MDG 5 focuses on maternal health.

[17] The three policy questions that research studies may inform are:
1/ defining health problems
2/ assessing potential policy and programme options
3/ identifying implementation considerations (Lavis, 2009).

inform policy and programme option decisions did not seem to be considered as important. These will be discussed below, in this order.

3.1 Identifying implementation considerations

The most commonly mentioned type of research was overwhelmingly operational or operations research, which was often described as looking at health service delivery problems or programme implementation. Other types of implementation-focused research that were noted by a range of interviewees included routine data, national surveys and Master of Public Health (MPH) student theses.

Operations research was discussed by national and sub-national government staff, as well as policy stakeholders. Some researchers also noted that this was the most used or useful for policy-makers.

> "[research is] extremely useful in the sense that I look at it, particularly operational research...operational research means you, you observe as you are running programmes. You observe a bottle neck and you want to find answers to it. Immediately to inform you to change, probably your course of action, to be able to improve the system better."
>
> 036, sub-national government staff

The fact that research was dichotomised, with formal academic or 'big', research pitched against 'small', operations research, helps to explain why the latter was generally viewed as more useful for policy and programmes, since it was considered to be more applied.

> "So research should not only be just for research, it should inform policy and it should be operational"
>
> 053, policy stakeholder

"in the past, studies that were made, they just shelved a report and if you do a study and shelve the report, then you haven't done anything, okay? But if we're doing operational research and ensuring that whatever study we're doing, we are doing it with at the back of our mind we have an objective that is to help get an intervention at the end of the day."

066, sub-national government staff

Routine data was also considered to be a useful type of research for decision-making. It was useful as a means of monitoring existing policies and programmes or identifying problem areas that required attention.

"we develop our data systems, our routine data systems which are never very good but we keep trying to improve the routine data systems. So that is one part of research because you are monitoring."

059, national government staff

"So even using your own service data you would be able to give you a sense of direction so in as much as it's a national policy now that unsafe abortion should be comprehensively addressed if we are to reduce maternal mortality because our service data indicate that between 20 to 30 percent of our maternal mortality all across Ghana are due to complications of unsafe abortion. So if you are able to recognise that from your service data then you don't have to wait for any publication to come from anywhere to say that reducing the incidence of unsafe abortion is likely going to improve maternal health in, in your area. So using your mere operations research service data are little, little ways that people can use to generate evidence to push forward national policies."

040, sub-national government staff

The quote above also highlights the broad use of the term 'operations research', in this case, including routine data. It also provides an example of the use of research at sub-national levels and its potential influence feeding up to the national level.

The recognition of MPH students as important research producers implies that their research was considered to be of actual or potential value. Their studies tended to tackle implementation issues.

3.2 Defining health problems

Operations research and 'small' research studies were also valued because they provided information as to the nature of health problems. Interviewees explained that, based on understandings of who was affected or the reasons for their behaviours, solutions or interventions could be devised.

> "[Research gives] us the data we need to first, drive our programmes. We say there's a problem with HIV, well, where is that problem, who is experiencing that problem, how do we access those individuals who are experiencing that problem. So it gives us the data, the raw data that we need to understand the problem and help to come up with solutions for it. It also can give us, if we do some operations research it can give us some more specific answers about the type of ways that we can address the problem. For example if we discover that 10% of our population is infected with HIV, well then we go to, then we need to look at that population more closely and...better understand that population so that we can identify ways to reach that population: where they are, who they are, um, what their emotional pulse points are, who their national leaders are that we can tap into so, it gives us those, it helps to create those, gives us those answers so that we can come up with solutions in our programmes."
>
> 004, policy stakeholder

Some also explicitly noted the importance of qualitative research, in order to understand contextual dimensions of health problems, or to provide explanations for quantitative findings.

> "So I prefer researches that are not just giving numbers but reasons behind the numbers and the actions."
>
> 045, national government staff

> "some other national data like the Demographic and Health survey is very good source of data for us...but what we need to actually have more [of] and that is the reason that we sometimes commission research of smaller er, qualitative studies that go beyond the numbers to explain the reasons why a lot of these things happen and so far that is what we don't have a lot"
>
> 017, policy stakeholder

National surveys, such as the Demographic and Health surveys (DHS) and the Multiple Indicator Cluster survey (MICS), were clearly valued by a range of interviewees. Not only did they provide information about the current status of various health problems, but interviewees also appreciated them because they could be used to identify trends over time.

> "Some [research studies] are done annually, monthly others are done three, within three years, other five years. So those are the things that inform, the research, the, the policies. For instance, this MICS, which may have come out in 2006, are been closely studied to find, the difficult, the challenging areas and based upon the information that new policy areas will be developed, yes."
>
> 031, national government staff

Although more commonly mentioned with reference to understanding the nature of a health problem or monitoring the implementation and effect of a policy or programme, a few pointed out that routine data could be used to identify problem areas.

With regards to maternal health, there was much anticipation of the national maternal mortality study that was ongoing at the time of data collection.

3.3 Assessing potential policy and programme options

Research which assessed policy and programme options appeared to be of less direct importance. Some gave reasons why they felt effectiveness research was *not* necessary for decision-making, as the quote below highlights.

> "Everybody wants big, big research with numbers and statistical significance but you don't need statistical significance to save a life, when you know that some things are, everybody knows that these things work but how you get it done, you know?"
>
> 059, national government staff

This quote also highlights the prioritisation of research focusing on implementation ("how you get it done") over effectiveness research.

Interviewees tended to feel that 'effective' policies and programmes could be designed once there was a thorough understanding of the situation (as could be gathered through operations or qualitative research). This is illustrated in the quote below:

> "what we have found is that many a time we need to do, like I mentioned before, qualitative research to understand issues, so it will help us to develop our strategies and our messages and materials."
>
> 045, national government staff

There was an implicit assumption that as long as these interventions were implemented well (as could be ascertained through operations research and monitoring with routine data), they would be effective.

A number of interviewees did mention the need to evaluate policies and programmes. However they tended to refer to monitoring whether or not the policy was being implemented as planned, or whether it was *perceived* to be acceptable and effective, rather than attempting to assess effectiveness through an intervention evaluations. There appeared to be little perceived need to test policy and programme options using formal evaluation methods in order to identify the most effective means of achieving strategic aims.

Whilst some mentioned the high profile trials that had been conducted in Ghana (e.g. the vitamin A supplementation trial, the Community Health and Family Planning study), the examples of research into policy options that were discussed tended to be from outside the country, if they were mentioned at all. For example, HIRD's strategic policy aims, as developed at national level, were based on international research.

> "Internationally, you know, there is something we call the high impact rapid delivery where well known interventions that have been known to work, you know, through research, are being up-scaled within our programme to achieve most of the maternal health indicators"
>
> 008, policy stakeholder

3.4 Summary: Types of 'useful' research

- Research was generally felt to be important and there was buy-in to the concept and terminology of the evidence-based movement
- Interpretations of the meaning of 'research', 'research use' or 'evidence-based' varied from internationally accepted standards
- Ascertaining research use was not straightforward; the research used and types of use may vary according to the level of the policy or programme
- Small operations research was overwhelmingly considered the most useful type of research study, particularly compared to 'big', academic research
- Implementation-focused studies were the most valued, followed by studies that helped to define health problems.
- There was little perceived need for effectiveness research
- It was implied that effective policies and programmes could be developed as long as there was a thorough understanding of the problem and no implementation problems
- Where assessment and evaluation were mentioned or valued, they tended to be focused on ensuring correct implementation; positive impact was implicitly assumed to follow once implementation occurred as planned

4. Awareness of Research

National level government staff generally reported that they heard about research 'often'. Commonly mentioned ways of finding out about research were through dissemination events held for individual studies, or by receiving study reports. Some mentioned searching for research, particularly on the internet, although it was not always clear whether they were referring specifically to 'research' or information more generally. Access to computers and the internet appeared to be more limited at the sub-national level, particularly among less senior sub-national staff.

In general national government staff seemed to rely on unsystematic or somewhat ad hoc ways of hearing about research. Apart from a small number of key regular meetings, such as the GHS senior managers' meetings (where research study findings were presented), there did not appear to be either fixed dates for finding out about research or structured means of searching for research to help inform particular decisions.

Sub-national government staff reported a lower awareness of research than their national level counterparts. They were more critical of research dissemination efforts, identifying difficulties in hearing about research either due to a lack of dissemination activities or a lack of publication.

> "[research is] useful but the dissemination is the problem. Normally the research is conducted. How it is disseminated, it does not trickle down. So most of the researches conducted at even the university level is kept on the shelf without any publication...so we cannot use the findings to improve the services and I think that is lacking, you know."
>
> 027, sub-national government staff

Several sub-national government interviewees noted that finding out about studies taking place in other parts of Ghana was a challenge. Some of the

routes through which they heard about research were the same as those mentioned by national level government staff. However those at regional and district levels tended to be more explicit about the lack of regularity of dissemination activities and the unstructured nature of dissemination strategies. They seemed to feel that their awareness of research arose in a more ad hoc manner:

> "I do hear about those research findings [from GHS Health Research Centres (HRCs) outside of their own district] when I happen to attend meetings where dissemination is going on and then they will present what they are doing. But it's not routine that I would know about what they are doing."
>
> 064, sub-national government staff

Policy stakeholders seemed to find the internet and email, particularly mailing lists, to be key means of finding out about research. Some also mentioned attending dissemination events, as well as receiving publications and reports. Some expatriate staff who worked for development partners and non-governmental organisations (NGOs) received information from their organisation's headquarters overseas. These interviewees reported feeling that the amount of information they received was too much.

A lot of research awareness appeared to arise through 'passive' means (i.e. where the interviewee received research information through emails or reports offered to them without their initiation, rather than them actively seeking it out). However some interviewees reported that they would actively search for research, particularly if they aimed to use it for a particular purpose, such as writing a paper or starting a new programme.

4.1 Summary: Research awareness

- Sub-national government interviewees were less positive about their awareness and more critical of dissemination efforts than national government interviewees
- Dissemination events and study reports were the most common means of hearing about studies, as well as searching the internet
- Some reported difficulties in finding out about studies conducted in other parts of Ghana
- Policy stakeholders felt that they often heard of research through the internet, as well as the more passive means of dissemination meetings and receiving reports
- A few policy stakeholders complained that they received too much information about research

5. Was Research Used?

At various points in the interviews the perceived use of research was discussed. Most government staff discussed their own use of other people's research, though a few mentioned their perceptions of other people's research use. Those who conducted research discussed the use of their own research either by others or by themselves (i.e. if research production was not the sole focus of their work).

5.1 Research use in policy

National government interviewees generally felt that policies were based on current research findings, or that research was used to inform policies to a large extent. As illustrated in the quote below, some noted that this was a goal that the government strived towards. Some also felt that research use was a relatively new and expanding phenomenon.

> "...to a large extent most of the ideas have been based on research, most of the new findings have been based on research. Especially the new programme areas and policies..."
>
> 011, national government staff

Some recognised that whilst research was often used in policy and despite the fact that this was aspired to, it was not always the reality.

> "we have been taking a lot of decisions in terms of policy without recourse to evidence. I mean maternal and child health, we put in place a free delivery service and delivery has, is, is an area where our performance has always remained so low. But we haven't gone into study the issues and yet we are developing policies on that."
>
> 052, national government staff

Compared to national level, interviewees from regional and district-level government held more mixed opinions about the extent to which national policy was based on research. Although some felt that national policy was generally based on current research, others felt that this was only the case 'sometimes', or that research was not used much in policy development. The quote below highlights the point that research use was not an absolute occurrence or non-occurrence, but rather, it may happen at certain times but not others.

> "Some of it is evidence-based, some of it is not. And then I, I think, sometimes the evidence is not there but sometimes even the evidence is there, there's no use. And I find that, people are not always very analytical even with the routine data, they kind of just present it and walk away. So it's a very variable, it could be much better used."
>
> 024, sub-national government staff

Perceptions of the extent to which national policy was based on current research findings often seemed to correlate with the interviewee's degree of closeness to national decision-making. Those who were not closely involved tended to be less certain and/or less positive about research use in policy. Some stated that they could not say, either because they had not read the policy or because they were simply not sure. Those who were involved in policy development were generally positive that policies were based on research. Satisfaction with progress towards improving maternal health or agreement with the current policy direction (which may also be linked to the degree of closeness to decision-making) seemed to be associated with positive views of research use. Those expressing frustration or disappointment with maternal health policy or the lack of maternal health improvements observed were less positive about research use in policy.

> "I don't think research has been very paramount in formulating of their policies...I don't think that research is part of the policy process in Ghana...because one of the things that we know now is that so much money has been invested in the health sector, for example, but it did not result in...improvement of health outcomes."
>
> 029, sub-national government staff

Development partner interviewees generally felt that national policy was not really based on current research; the only interviewee who was more positive about research's influence pointed out that this was only their assumption, since they hadn't seen the Reproductive Health Policy themselves. Those who felt research wasn't used explained that other factors were more influential (e.g. the importance of religion preventing use of research on abortion), or thought it was because research institutions were not involved in policy discussions.

Interviewees from NGOs had mixed opinions about research use in government policy. As was the overall trend, those who were very involved in national policy development in Ghana tended to be positive, whilst those less involved were either uncertain or had mixed views.

> "[I'm] not so fully aware of what some of the national maternal policies
> were. I would say they're probably based on a lot of statistics, um... that will probably be based on a lot of big, quantitative surveys..."
>
> 070, policy stakeholder

Most university researchers, as well as some GHS researchers, were not asked about research use in government policy, as it was established early on in many interviews that they were generally not linked into the policy-making process and/or were not aware of the current Reproductive Health Policy. Of the researchers who were asked, most tended to say that they didn't know, although several of these guessed that policy 'probably' would be based on research.

> "That will be difficult for me to answer. But I guess the child health...unit, I'm sure they look at the data...I guess the districts also send their own returns on maternal you know, mortality ratio. And I think, I suspect that they've been looking at the data and then, you know, adjusting their policy to, be in line with, you know, the data they have. But I cannot, I cannot, I cannot speak for them."
>
> 013, university researcher

The quote above also highlights a broad interpretation of the term research. Although they were asked about the extent to which policy was based on current research findings, in discussing the use of "data" and "their own returns" it is clear that the interviewee considered routine data to be a form of research, indeed possibly the most used type of research.

It was also clear that there were several ways of looking at research use. Research may be seen to be used at some stages of the policy process, or certain levels of the policy, but not others. Alternatively it may have been that only certain aspects of policies were felt to have been based on research, rather than the entire policy, as the quote below describes.

> "Some, like the free maternal health care [policy], I wouldn't say that is evidence-based per se, but we, part of it is still evidence-based because we know that we want to improve access to skilled delivery"
>
> 059, national government staff

The quote above demonstrates some of the difficulties in explaining or describing research use. It implies that, although they did not believe the decision to introduce free maternal health care was made based on research, the fact that it meets an existing aim proffers an underlying element of research use.

5.2 Use of own research

Those who produced research were asked whether they felt that their own studies' findings were used. Those conducting research alongside their main work (e.g. sub-national government and NGO staff) were more positive about their studies' findings being used than 'professional' researchers, because they tended to report using their own research themselves.

Researchers' views were mixed. Whilst most GHS researchers were positive about the use of many of their own studies, university researchers' opinions were split. Those who did not believe their research had been used tended to be those who had not disseminated their findings, or were not linked in with the GHS or Ministry of Health (MoH). A few noted that some studies' findings were used whilst others were not. The examples of research use that GHS researchers frequently cited were the large-scale, high profile studies which involved international partners, such as the Community Health and Family Planning (CHFP) and vitamin A supplementation studies. Studies that were not considered used tended to be smaller, without international collaborators, large funds or extensive dissemination activities. Several were not certain whether or not their research had been used.

5.3 Summary: Research use findings

- Many interviewees were positive about the extent to which national policies were based on research
- Those involved in policy decision-making tended to have positive views of research use, whilst those who were not linked into the policy process did not feel that research was used (development

partners were the exception, holding negative views despite policy involvement).

- Research use is a complicated issue; research is not simply used or not used. Rather, it may be used only partially, in some but not all stages of the decision-making process and in numerous different ways
- Research producers tended to be most positive about the use of their own research when they were able to use their own findings themselves (i.e. if they conducted research as a secondary activity to their main role)
- Researchers were more positive about the use of their own research for studies which were large, high profile studies with international collaborators, which were well disseminated

6. Perceptions of Foreign Research

6.1 Awareness of foreign research

Most interviewees implicitly discussed their awareness of Ghanaian research when asked about research in general, to the neglect of research conducted elsewhere. Some government staff mentioned international conferences as one route of hearing about research (which would include foreign research), though one pointed out that "you are not always going on international conferences" [007, national government staff]. Non-Ghanaian policy stakeholders seemed to be more aware of foreign research findings as they subscribed to listserves and mentioned receiving updates from their international headquarters. The lack of internet access for some less senior sub-

national government staff could potentially limit their awareness of foreign research.

6.2 Use and usefulness of foreign research

Many interviewees felt that foreign research was used or useful for informing Ghanaian policy. Some interviewees gave examples of national policies that were directly informed by evidence from other countries, such as HIRD (as mentioned above). A few interviewees felt that research findings were more likely to be accepted or adopted if they were introduced through international organisations (even if the original research was conducted in Ghana). It was recognised that foreign research may also be influential in Ghana since it may have informed international policies which were adopted in-country.

> "even if there's evidence just within the country, it doesn't move into programming, but if it has international backing, so I cited the bed net as an example, and I cited the vitamin A as an example."
>
> 046, Health Research Centre (HRC) researcher

> "But what I see happening is when the policy drive is from outside, it gets more integrated than when we are generating information from within, and we must learn to make use of information that we generate within because I think that is the most reliable."
>
> 046, GHS researcher

The quote above is another example where international research terminology was used with different meaning in Ghana. In this case, the interviewee states that Ghanaian research is more 'reliable' than that conducted elsewhere, possibly using the term in the lay sense to mean

'relevant' or 'important', rather than in the academic sense, referring to reliability in the sense of methodological quality. This suggests that, although this interviewee was a researcher, they may have aligned themselves more with non-academics (e.g. such as decision-makers) rather than with the academic research community.

Not all interviewees felt that foreign research was used in policy. Some pointed out that learning from other countries was not limited to research, but could occur through exchange visits or simply learning from others' experiences. Some felt that exchange visits would be more influential than research from elsewhere. These visits tended to look at policy options and implementation issues and, as such, conform with the previous finding that effectiveness research on policy options was not highly valued.

A few felt that decision-makers would be unlikely to use foreign research, explaining that they would only use it if the research was brought in by international organisations.

> "I don't think policy-makers will go and read about other countries. So it's, international organisations like WHO, UNICEF and all the others who would bring all these other findings which may be relevant for various countries to a level where different governments can pay attention to them."
>
> 015, academic researcher

On the other hand, some felt that foreign research may be used more than local studies, either because of a lack of Ghanaian research production or because of the strong influence of external agencies.

> "to a greater extent [maternal health policy and practice] it's based on current research findings...a lot of what we do is based on the little research we have here. There is the international research, some of it may apply, some it may not apply because of cultural differences and the way things are set up. But that's all we have, so we use that often, er, to er, determine policy...Often, a lot of that research comes...WHO would put up some statements about it and then we all go there, look for it and try to see how well we can implement it.
>
> 048, policy stakeholder

The influence of foreign research, through global policies or organisations, was viewed negatively by certain interviewees. This was either because the interviewees were not convinced of the evidence itself, or because they did not feel that it was applicable/transferable to the Ghanaian context but that it had been 'forced' upon them regardless. For example, the quote below describes an interviewee's disagreement with the international policy of excluding traditional birth attendants (TBAs) from definitions of skilled attendants and, more generally, their exclusion from policies to reduce maternal mortality.

> "because the international community says no, so in Ghana, we say no. You know, which means that the international community does not recognise the reality we live with here..."
>
> 047, academic researcher

Where foreign research was used, it was more likely to involve studies assessing policy options (as mentioned in the previous section), such as selecting interventions to be included within HIRD, rather than defining health problems or addressing implementation issues.

When explaining reasons for, or situations of, foreign research use, it became clear that the examples being discussed often referred to

laboratory or clinical studies, rather than public health research. This was also true for responses to questions about local applicability/transferability, where vaccine efficacy trials were a common example discussed. As mentioned in chapter 2, this kind of research (with relatively short causal pathways and based on the greater likelihood of universal biological mechanisms) is generally considered easier to apply and transfer from one setting to another, compared to public health interventions which rely on more context-sensitive behavioural and interpersonal mechanisms. This suggests that clinical/laboratory research may be more likely to be considered locally applicable/transferable than more complex public health research. The following chapter explores perceptions of local applicability/transferability in greater detail.

6.3 Ghanaian research influence outside Ghana

The question of international influence was not uni-directional. Many interviewees noted that Ghanaian research (particularly the high profile studies conducted by the HRCs) was influential, or of potential use, in other countries as well as at the global level.

> "the kind of research we do, actually has an international nature. So findings from here can be translated to settings similar to our own here"
>
> 038, GHS researcher

The quote above illustrates the perceived potential value of Ghanaian research beyond its original study setting. By specifying its translation to similar settings, the interviewee hints at the need for local applicability/transferability assessments, which will be discussed in greater detail in the following chapter.

A few interviewees expressed the opinion that not all research conducted in Ghana was of use to Ghanaians but, due to the research agenda setting and funding situation in the country, would only be of use to those elsewhere. The quote below illustrates this sentiment.

> "health research people will say, oh we don't fund them, that is why they can't do that, so when they get money from...the international community...we also accept that, like...they contributed to vitamin A supplementation being adopted and they are also looking at the issue of efficacy of some vaccines. Well those are also useful in informing policy on a global scale but for our service delivery I really appreciate those which came from the grassroots in various areas."
>
> 050, national government staff

The quote above highlights their preference for small, local studies ("grassroots"), as well as for implementation research ("for our service delivery"), whilst recognising that Ghanaian research may be of use elsewhere rather than in Ghana itself.

Certain types of foreign research were more likely to be referred to as useful, notably efficacy studies, or evaluations of 'simple' interventions (e.g. clinical interventions). As the quote below illustrates, even when interviewees reported that foreign research was of use, the need for local research was still recognised, particularly for implementation.

> "...we were going to write a policy on malaria and the drugs. There were a lot of African countries that had already started using the combination drugs and they came, they did a lot of presentation. It wasn't very, very necessary to do a wide scale research to find out because its, the evidence is there....Some of the researches have already been done [outside of Ghana], it's been proven. There's no point going to also repeat the whole thing. But whilst you are implementing you can still, you know, do some operations research to make sure that it's..."
>
> 030, national government staff

Although the use of foreign research was mentioned by a substantial proportion of interviewees, with some referring to its influence on national policy aims, few provided specific details about the types of research questions these studies addressed.

6.4 When is foreign research used?

Foreign research was not felt to have been used indiscriminately. Assessing the similarity of the Ghanaian context to the research study setting, or determining whether or how to adapt it, were mentioned as necessary when deciding whether or not to use foreign study findings.

> "So researches outside our country also help. You know what people have done and you can decide whether you want to do the same thing or how to modify it to suit your circumstances."
>
> 045, national government staff

Some interviewees pointed out that foreign research would be used if no research had been conducted on a particular topic within Ghana. Others explained that whether or not foreign research was used or would be

considered useful depended upon the topic, as well as where it had been conducted (so hinting at how they may assess local applicability/transferability). Some explained that, as long as the situations were similar, lessons could be drawn from foreign research.

> "I think that you know, most times the policies have not focused basically on just research, research findings in, in Ghana alone but on also regional evidence...African and regional. Because basically we don't differ too much so we don't necessarily have to use Ghanaian data but because the similarities are generally across board, the situations are across board, so we haven't focused only on data but where data from Ghana has been available, we tend to want to include it. But data is also limited so that's also another issue."
>
> 012, other

Perceptions of the local applicability/transferability of research will be explored in greater detail in the following chapter.

6.5 Summary: Perceptions of foreign research

- Foreign research was considered to be of value and used in Ghana
- International organisations and global policies played a major role in introducing foreign research
- Ghanaian research was also recognised as being of use to other countries and for global policy
- Efficacy studies, or evaluations of relatively simple interventions were often referred to as examples of foreign research use

- It was recognised that local research may still be required when using foreign research findings, particularly for implementation
- Foreign research was not accepted indiscriminately; there was an accepted need to assess its applicability/transferability to the Ghana context

7. Discussion: Research Use and Usefulness

7.1 Perceptions of research

Three key issues arose from the interviews regarding perceptions of research. Firstly, just as there is more than one way in which research may be used in decision-making, so research itself is not a single, homogenous entity. Secondly the dichotomy of 'big' versus 'small' research highlights potential challenges that may be faced if attempting to encourage academic research in Ghana. Thirdly, the lack of perceived need for effectiveness research in Ghana presents an additional challenge for proponents of the evidence-based movement. These three issues will now be discussed in more detail.

7.1.1 Research is not a single, homogenous entity

What is clear from the interviews is that research was not viewed as a single, homogenous entity. The variety of the types of research and particularly the range and types of research producers are factors rarely discussed in the research use literature. Although the evidence-based movement is focused on academic research, it may be detrimental to fail to recognise other types of research and research producers. It should also be appreciated that not all research types may be valued or used equally.

7.1.2 'Big' versus 'small' research

There was a generally accepted view that 'big', academic research was less useful to decision-makers than 'small', operations research. This stemmed from the common perception that 'big' research was not felt to be applied, took a long time to produce and was more theoretical and less directly relevant to policy and practice. This may explain, or be explained by, the greater perceived use and usefulness of research conducted by GHS researchers than by academic researchers (although academics did also conduct operations, or 'small' research too). That this dichotomy was so widely accepted by a range of interviewees shows how engrained this viewpoint was in the national psyche. Given that the evidence-based movement focuses almost exclusively on academic research, this highlights a key challenge to be tackled if research use (as the movement perceives it) is to be encouraged in Ghanaian policy decision-making.

There are a number of reasons why 'small' research may have been preferred, which build on the findings from the previous chapter. Firstly the agenda for 'small' research may be more likely to have been set by decision-makers than in the case of 'big' research. 'Big' research was usually funded by international or foreign organisations, which would generally play a larger role in setting the agenda for such studies. 'Small' research, on the other hand, required fewer resources and so was easier to conduct, given the lack of research funding within Ghana. Finally, in many cases 'small' research was conducted by the potential research user (who completed studies as a secondary activity). In contrast, government staff were less likely to be involved in 'big', academic research studies.

7.1.3 Implementation and understanding, not effectiveness

The concept of effectiveness was rarely noted. Policies were assumed to be effective, so long as they were implemented properly. This explains the emphasis on implementation and operations research in order to identify

and remove any bottlenecks experienced during the delivery of policies and programmes.

The perceived need for research seemed to focus on improving existing implementation and understanding the size and nature of health problems in order to develop new policies and programmes. There seemed to be an implicit assumption that as long as policies and programmes were developed based on a 'true understanding' of a problem or situation, and that implementation challenges were resolved, they would be effective.

Few interviewees seemed to accept the notion, inherent within the evidence-based movement, that policies and programmes could potentially be ineffective or harmful and that for this reason, their outcomes should be evaluated rigorously. This represents a conceptual chasm that the evidence-based movement would need to address if their prioritisation of effectiveness research is to be accepted in Ghana.

7.2 Perceptions of research use

It is not surprising that national and sub-national government staff each felt that they were more likely to use research than the other. A simple explanation could be that people tend to assume that their own research use is greater than others, although many other explanations are also possible. Responses may reflect acquiescence bias. Since the researcher came from a high income country, interviewees may have assumed that she hoped to hear that they did use research, causing them to emphasise their own research use (though not necessarily feeling this obligation towards others). It is possible that the different perceptions reflect a natural bias towards seeing yourself and your peers in positive light, whilst viewing others less favourably. Alternatively it may reflect tensions or a lack of understanding between national and sub-national levels. Another explanation could be that, since different research is used at different stages of the policy process and for different types of decisions, the types

of research used by national and sub-national government staff may vary. For example, sub-national levels may be more likely to use 'small' research or research that is excluded from a narrower definition of research (e.g. routine data). The fact that those at other levels were not using the same types of research may lead to the belief that they were not using research at all. A more detailed study would be required to ascertain which of these reasons best explain the differences found.

The belief held by some, that research was not used in policy, may reflect a genuine belief that research did not inform decisions. However it could also be that such views are expressions of other related issues. Negative perceptions of research use may reflect general frustration or disappointment with progress in improving maternal health, or may be caused by disagreements about the policy direction (particularly if this meant that the existing policy did not reflect research that supported their own preferred policy option). It may also be the case that interviewees only considered direct, instrumental research use, since it is harder to observe and accredit enlightening or tactical research use. Thus whilst there may have been no direct, instrumental research use, use in an enlightening or tactical manner may not have been noted.

GHS researchers were more positive about the use of their own research than academics were. This may be because they were more linked in with decision-makers (particularly within their own region and district); their dissemination activities were also more comprehensive. In addition they may have been more likely to conduct the research considered useful by decision-makers, namely operations research, as opposed to academic research (which was considered synonymous with 'big' research). GHS HRCs had also conducted the large, high profile studies which were particularly noted for their uptake into national policy. These trials represent a 'deviant case' in terms of the use and value of research, since they would be considered 'big' research. They used academic, rigorous research methods and focused particularly on evaluating effectiveness. Possible

reasons for their use and perceived value include the fact that decision-makers were involved in the studies throughout, a factor frequently associated with research use (Innvaer et al., 2002). The high profile trials involved collaborators and funding from high income countries and there was considerable dissemination and interest outside of Ghana. These factors may also have encouraged the uptake of findings within Ghana. A more thorough exploration of the nature of the specific studies and the factors influencing how they informed decision-making at various levels could provide insights into why these 'big' studies were used and valued.

It is not surprising that those conducting research secondary to their main work tended to report using their own research, even though it was less likely to have been disseminated widely (as found in the previous chapter). As professionals, those conducting the research were likely to be in a position to act on their own research findings themselves, unlike researchers, who must disseminate and 'persuade' others to act on their findings, if they are to be used. It was also likely that they would have been able to choose their own research topics, based on questions they hoped to answer in order to improve their own work. This would mean that findings would be of immediate, direct use to them.

Perceptions of research use are clearly complex. Whilst some research was felt to be used, other studies were not. Similarly, research may have been considered to influence some policy decisions but not others. The simple question of whether research is used in policy hides this inherent complexity which must be considered when analysing responses. It could be argued that responses to questions about research use provide greater insights into policy processes and dynamics, rather than accessing the 'truth' of whether and how research was used 'in reality'. A simple question about whether research was used is also unable to ascertain different types of research use (e.g. direct or enlightening research use).

The question of whether or not a policy or programme was considered 'evidence-based' is clearly not straightforward. As well as different stages

or levels of policy at which research may have an influence, different types of research may be used for different purposes.

7.2.1 Perceptions of the awareness of research

Awareness of research could be considered a prerequisite for research use, although this errs towards the more explicit, direct use of research (rather than conceptual or enlightening research use, for which an explicit awareness may not be necessary). Exploring research awareness is nevertheless important in helping to develop an understanding of the issues around research use and perceptions of the value of research for policy and practice.

It could be argued that if research in general was not considered useful, decision-makers would not spend time trying to find out about it. It is also difficult to imagine how the comprehensive consideration of research to inform policy decisions (as promoted by the international evidence-based movement) could be realised without systematic and structured means of identifying research. By exploring decision-makers' research awareness, insights can be gleaned into their links and involvement in research production and the extent to which they actively sought, rather than passively received, research. Understanding research awareness is therefore useful in developing a picture of how the value of research is perceived, as well as what barriers may inhibit research use.

Self-perception of research awareness is difficult to assess. Only by being aware that a study was being conducted could a decision-maker know whether they had been made aware of its findings. It would be impossible to know that they had not been made aware of a study's findings if they did not even know that that study had been conducted. This would be particularly true for studies conducted outside of Ghana. Rather than viewing responses to questions about research awareness as providing answers that reflect the 'truth' about the extent of their awareness, this

section should be seen as offering insights into various perceptions of the research use process.

Many seemed to implicitly refer to their awareness of Ghanaian research, with few discussing research from outside Ghana. This may to some extent reflect the point made above, that it is easier to assess awareness for those studies they knew were being conducted. It may also reflect their natural predilection for Ghanaian research over foreign studies.

National government staff were positive about their research awareness, although it appeared to be more often through ad hoc routes, rather than more systematic and structured means. This goes against the evidence-based movement's 'ideal' concept of pervasive and comprehensive research use in decision-making.

Research awareness was more problematic at sub-national levels, suggesting that there may be challenges for research use below the national level. This may be one causal factor explaining differences in perceived research use at national and sub-national levels. It may also affect perceptions of the value of research and of local applicability/transferability.

Non-Ghanaian policy stakeholders seemed to be more inclined to use foreign sources of research information, such as international listserves, or information from international organisation's headquarters. This could have implications for their perceptions of local applicability/transferability and the values they placed on foreign research compared to Ghanaian research. These issues will be considered later in this chapter and in the following chapter.

7.3 Implications for research use

Research use was viewed as a goal, a new aim to make policy and practice evidence-based. Research was considered valuable to interviewees. Thus

there was some acceptance of the ideology of the international evidence-based movement (i.e. encouraging research use in decisions). However several interviewees ascribed unique meanings to commonly-used terms and phrases, suggesting that they lacked full comprehension of the movement's concepts and ideas. The broad definition of research held by many interviewees also demonstrates this disconnect.

Taking a broader view of what constitutes 'research' may also affect perceptions of research use and its usefulness, increasing the likelihood that research would be perceived as both used and useful. It is important to bear these conceptualisations in mind when interpreting perceptions of research use and its usefulness, since these differences could lead to misinterpretation. For example, research use may be overestimated if the definition of research used by interviewees is broader than that assumed by the interviewer.

7.4 Implications for local applicability/transferability

That foreign research was considered to be of value to Ghanaian decision-makers suggests that at least some studies conducted elsewhere were perceived to be locally applicable/transferable. Those within Ghana also acknowledged the potential usefulness of their research in other countries. However most of the studies discussed in relation to local applicability/transferability were relatively simple interventions. For public health research the issues of local applicability/transferability are indeed more complex, which may explain why these were not automatically considered useful for the Ghanaian context. The following chapter will look at these issues in greater detail, to explore the perceived dimensions and factors within local applicability/transferability.

Chapter 5:
Perceptions of the Local Applicability/Transferability of Research

1. Introduction

This chapter explores perceptions of local applicability/transferability, which relate to the factors that may influence whether or not study findings from one setting are considered to be useful in a new setting. The interview techniques used to explore this complex issue will be described, followed by a brief overview of the data from each. The main body of the chapter will then explore the salient dimensions and factors of local applicability/transferability that emerged collectively from the data.

2. Exploring Local Applicability/Transferability

Three techniques were used in the interviews to explore perceptions of local applicability/transferability. In the first, a 'brainstorm', interviewees were asked to identify the important information that they would like to know, if they had to decide whether findings from another setting were of use to them in their own setting (either nationally or at their local level, as appropriate). The second was a rating question, where interviewees were shown a list of possible dimensions which may be considered when assessing local applicability/transferability. They were asked to rate these in order of importance and discuss their reasoning. In the third technique, a study ranking exercise, interviewees were shown four summaries of intervention evaluations and were asked to rank them in order of applicability/transferability to their setting. Each technique will now be discussed in greater detail, describing the methodological issues that arose and key findings specific to each technique.

2.1 Brainstorming about local applicability/transferability

Government staff and policy stakeholders were asked to identify the information they would like to consider when deciding if the findings from a study conducted elsewhere could be of use to them in their setting. Researchers were asked a similar question, but referring to when they thought their findings could be of use elsewhere. This question was the first to be asked about local applicability/transferability, in order to elicit views that had not been biased by factors introduced by the researcher.

Overwhelmingly, the most frequently mentioned issues related to the comparability of, or similarities between, the original study setting and the new setting.

> "I would like to know about the country and see how similar that country is to Ghana. [*Similar in what ways? What particular things?*] Similar in the, the, erm, the demographics, the educational background because if a research is done in a country where all people are very educated, definitely lifting it to Ghana may not work. So when they, wherever the research was done is similar to Ghana, as far as our educational background and things like that, socio-economic indicators are concerned then you can, you can say that maybe it can work, you can look at it and look at your circumstances and modify it to suit your, your circumstances."
>
> 045, national government staff

The 'implementability' of the intervention was also mentioned often.

> "[I would] look at the setting – is it similar? [*what do you mean by the setting?*] The level of development, the whole study design, especially the recommendations because some may be difficult or almost impossible to implement."
>
> 028, national government staff

Issues to do with the study design or methods, the effectiveness or potential effectiveness of the intervention or its adaptation were raised less often. The congruence of the study's findings with beliefs, experiences or other evidence was rarely mentioned at all.

2.2 Rating local applicability/transferability

The rating question was introduced in the fourth interview, after it became clear that it was difficult to elicit discussion on such an abstract concept without the use of probes or prompting tools. The original list of dimensions that interviewees were asked to rate was adapted from the framework devised by Wang et al. (Wang et al., 2006) (see table 3 in chapter 2).

During the initial interviews certain problems with this list became apparent. The terms 'social acceptability' and 'cultural adaptability' were two dimensions which were commonly misinterpreted. Several interviewees focused on the first word of each phrase, interpreting both as referring to 'culture' or 'social setting', such that they were unable to see the difference between the two. In the quote below, the two phrases are mixed, becoming "social adaptability, acceptability" and "cultural".

> "so I'll put social adaptability, acceptability and political environment and barriers as probably the last, er, two things that I would like to put on my scale. But I want the cultural, resource implications, and the educational level of the population as the top three."
>
> 011, national government staff

It also became apparent that 'baseline prevalence of disease or risk factor' as a dimension within transferability was not well understood as a factor affecting the potential effectiveness of an intervention. Several talked about the importance of considering whether there was a need for the intervention, or if the intervention focus was a priority, as additional

dimensions to be added. This suggests that prevalence, as it was presented, was not necessarily conceptualised as being associated with need or priority. It also suggests that the perceived need for an intervention was not considered to be based on prevalence alone.

For these reasons after the fifteenth interview the list of dimensions was amended in the hope that it would be easier for the interviewees to understand (as shown in table 4 in chapter 2). Although the concept of transferability, or potential effectiveness was often difficult to comprehend, it was kept in the revised list because views on this issue were hoped to be explored further. By removing it, there was concern that without this 'probe', discussions of potential effectiveness would diminish.

The rating question was not always found to be easy to comprehend; several interviewees requested that the question be repeated or clarified. Occasionally it became clear that the interviewee misunderstood it to refer to issues relating to the replication of the research study itself, rather than the intervention that had been evaluated.

Although most grasped the concept of applicability (called 'can it be done here?' in the revised framework), the issue of transferability (called 'if it is done here, would it be as effective?' in the revised framework) was found to be particularly difficult to understand.

> "I guess maybe a point of clarity, when you said transferability, what exactly do you mean by that? [*so, applicability is whether or not it can be done here, regardless of whether it would work the same way. Transferability is if it is done here, will it have the same effect that was seen in the other settings where it's been done?*] mm-hmm [not sounding too sure] [*so it's whether the effect would be transferable if it was done here*] the effect [*so if an intervention was done in say, Cambodia and it was found to be really effective*] and then you try to do it [*and they're trying to do it here and so applicability would – whether it would actually be possible to implement it here*] right [*but transferability is, if you did it here, would it be as effective as*

the study found it was in, in Cambodia] mm-hmm. [*does that make sense?*] mm-hmm [affirmative]. Baseline prevalence of disease or risk factor? Well, ...it's a little bit – for what you're saying and what's worded here is, are a little bit tricky"

004, policy stakeholder

Fewer interviewees rated the dimensions of transferability compared to those who rated the dimensions under applicability. Some did not discuss the dimensions listed under transferability at all, or only considered them following additional probing by the researcher.

Many interviewees felt that all the dimensions listed were important, or that they were unable to rate their importance since this would depend on the particular issue being considered. This is exemplified in the quote below.

"Well I can't say what is the least important...No, it could go wrong on all five accounts from the top box, like, and so it really depends on what you are looking at and, and I am tempted to say population is the least important because it's, I think it's quite comparable all over the low income countries. But if it's looking, if your intervention is looking at specific issues then it may be very crucial how the population compares to the original population, and then maybe setting is less important, whereas in other, possibly like a health insurance system really depends on the health system infrastructure...So I find it, I find it impossible to say well this is definitely the least important whatever the intervention is, I can't do that."

042, Ghana Health Service (GHS) researcher

The quote above also provides an example of a response that automatically focused on the applicability dimensions ("the top box"); to the neglect of the transferability dimensions.

Population and setting factors were most commonly rated as important for local applicability/transferability, followed by acceptability. The educational level of the target population was most frequently rated as least important in the original framework. In the revised framework, adaptability was often considered to be less important. Some explained that this was because it was relatively easy to adapt interventions, or that adaptation would happen regardless.

> "probably I'll pick adaptability at the bottom...yes because obviously what, once the population the setting characteristics are same, and there's an acceptability I guess largely, once the people have accept, accepted the intervention, I mean it would be easy for them to adapt to it and see how it works out."
>
> 018, policy stakeholder

Perceptions of how easy it would be to alter a particular dimension often affected their relative importance. Those seen to be easily changed were judged to be less important when assessing local applicability/transferability compared to those considered more immutable. There lacked consensus about the dimensions' relative flexibility, with perceptions varying considerably, as the two quotes below illustrate with regard to population-related factors.

> "everybody seems to talk about the culture...but I've, I've realised that culture is very dynamic and it has always been dynamic. But...as soon as you, you explain to people, sometimes they are willing to listen to you because they know that whatever it is that you thought the culture was a barrier then all of a sudden it doesn't seem to be a barrier anymore. So I think that sometimes we overplay on the, the role of culture too much sometimes, yuh. Mm-hmm"
>
> 007, national government staff

> "if you take the first two [population and setting], the first two will be challenges if you are exporting something from another country to Ghana or from Ghana to another country...but the, the type of intervention, adaptability and acceptability – since those ones are not fixed things, those one can easily be changed to suit the first two. That is the first box. Because ...you can't just change the population to I mean, maybe...the way they will see maternal issues you cannot just change them over a period. So those two are quite difficult. That is not saying that they cannot being done but they poses much challenges compared to the other three in the first box...so adaptability of intervention, yes, acceptability of intervention, yes, those ones can be done. But the population you can't change."
>
> 039, GHS researcher

Several factors were considered to be intrinsically linked, interacting and influence each other. For example, political factors would influence resource implications, population factors were linked to the acceptability and implementability of the intervention, and the adaptation of the intervention would influence and be influenced by all the other dimensions.

2.2.1 Differences between interviewees

Fewer sub-national government staff were able to identify which dimension they felt would be most important, compared to other interviewees. Those that were able to rate the dimensions either said that all were important, or that population or setting would be most important; one suggested that it would depend on the issue. Policy stakeholders and researchers were more likely than government staff to consider acceptability and the political environment to be the most important dimension.

2.3 Study ranking exercise

The main purpose of the ranking exercise was not to find out which study was considered most or least applicable/transferable per se (despite this being the overt focus). The technique was used to explore the reasons for their decisions. The use of actual intervention evaluations moved the interview questions away from abstract constructs to more definite examples. It was expected that this would make it easier for interviewees to discuss the factors important for their local applicability/transferability assessments.

The study ranking exercise involved showing interviewees four abbreviated abstracts of intervention evaluations that aimed to tackle delays in accessing healthcare for obstetric emergencies. The interventions evaluated are summarised below (see appendix 1 for the study summaries presented to interviewees):

- Tanzanian study: community empowerment approach to develop community-based plans for emergency transportation to health facilities
- Nigerien study: solar-powered radio communication between health facilities and the district hospital, as well as a pay-per-use Land Cruiser ambulance
- Indian study: training for women and their primary care givers in home-based life-saving skills
- Nigerian study: a community loan programme and emergency transport scheme, using local taxi drivers who charged set fees.

Interviewees were asked to rank the studies in order of their applicability/transferability to their own setting. They were then asked to explain their reasoning and what other information they would have liked to have had. Not all interviewees were asked to complete this exercise, some

were excluded due to time constraints or if they had professed a lack of knowledge or interest in maternal health at an earlier stage of the interview.

Many interviewees found this task difficult. Several failed to rank any or all of the studies and others explicitly commented on the difficulty of the task. The language used in responses was frequently cautious and hesitant. Responses were often framed in a subjective and uncertain manner, rather than being framed as 'fact' or more certain beliefs.

> "I think I'd go for maybe the, the one in Niger, the number two."
>
> 038, GHS researcher

> "[...*tell me which ones you think are the most and least applicable for the setting here in the* [*name of region*]?
> for... yeah, the, um, I think this, number three"
>
> 041, sub-national government staff

Interpretations of the studies differed widely, in terms of both the interventions evaluated and their results. For example similarities were noted between several of the studies and a well known project conducted in Ghana which involved an agreement with the Ghana Private Road Transport Union (GPRTU) to ensure fees for transporting obstetric emergencies were fixed (to prevent overcharging). Whilst some likened this project to the Tanzanian study, others referred to its similarity with the Nigerien or Nigerian studies. Some felt that the studies were too similar to rank, for example either failing to see the difference between either the Tanzanian and Nigerien studies or the Tanzanian and Nigerian studies.

> "I don't find the difference between the, the Tanzanian one and the, you've got, they are all talking about a transport schemes [*the Tanzania and the Nigeria?*] yes"
>
> 058, national government staff

> "Um, the Tanzania and the rural Niger ones are about the same, are on the same line"
>
> 045, national government staff

Interpretations of the Indian study were particularly interesting; some considered it to be a study of traditional birth attendant (TBA) training, whilst others focused on the birth preparedness component of the intervention.

Although the interventions evaluated had multiple components, when discussing them, interviewees often only focused on individual components. Most did this implicitly, although a few were explicit in their differential ranking of the various components. For example some focused on the solar-powered radio communication system in the Nigerien study, whilst neglecting to discuss the Land Cruiser component, or vice versa.

> "The issue of rural Niger – we, we tried it and it was a little difficult and we are not, even though the issue of communication is very important, we went into the issue of communication using a Motorola system that was being sponsored by UNICEF. It didn't work well because of technical difficulties because the equipment brought were very, not so sophisticated but difficult to maintain. So now the communication aspects fortunately for us, is all being taken up by cell phone activities so that, that is something that is already ongoing."
>
> 040, sub-national government staff

Table 7 below presents the number of interviewees that selected each study as most applicable/transferable and table 8 presents those findings for the least applicable/transferable study. Perceptions of the most and least applicable/transferable generally complemented each other in that the Tanzanian study was most frequently selected as the most

applicable/transferable and least frequently (indeed never) selected as the least applicable/transferable. Similarly, the Nigerian study was least frequently selected as most, but most frequently selected as least applicable/transferable to the Ghanaian context. Overall, the Tanzanian study was ranked the highest, followed by the Indian study, the Nigerien and Nigerian studies respectively. A more detailed consideration of perceptions relating to each study will be presented below tables 7 and 8.

Table 7: Most applicable/transferable study: frequency of responses

	Tanzania study	Niger study	India study	Nigeria study	Other response	Not ranked	Not asked	Total
National government	3	2	1	1	0	5	1	**13**
Sub-national government	2	0	5	1	1	0	3	**12**
Policy stakeholders	4	2	2	2	2	5	1	**18**
Researchers	6	5	4	1	0	2	6	**24**
Other	1	0	1	0	0	0	0	**2**
Total	**16**	**9**	**13**	**5**	**3**	**12**	**11**	**69**

Table 8: Least applicable and transferable study: frequency of responses

	Tanzania study	Niger study	India study	Nigeria study	Other response	Not ranked	Not asked	Total
National government	0	1	1	4	0	6	1	**13**
Sub-national government	0	1	1	5	1	1	3	**12**
Policy stakeholders	0	4	3	2	0	8	1	**18**
Researchers	0	5	1	6	0	6	6	**24**
Other	0	1	0	0	0	1	0	**2**
Total	**0**	**12**	**6**	**17**	**1**	**22**	**11**	**69**

2.3.1 Tanzanian study

The reasons given for selecting the Tanzanian study included the view that transportation was a problem in Ghana (although it was not clear why this would be a reason to select this particular study over the other transportation-related studies). Another common reason was because the community empowerment approach was felt to be generally successful (for example, by encouraging community ownership or by increasing the sustainability of the intervention). Some also chose it because the evaluation found that the intervention reduced the cost of transportation (either implicitly or explicitly suggesting that transportation costs were a problem in Ghana). The quote below illustrates all of these reasons.

> "For me I think, this, one, Tanzania, the study in Tanzania should be the first one...because it has to do with community empowerment...so empowering the community, helping them to draw their own plans and even implementing it, is so important. And then actually you could also see that at least the cost of transportation, which most of them, which is also one major problem, is, has actually gone down."
>
> 033, GHS researcher

2.3.2 Indian study

The focus of the Indian intervention was a common reason for selecting it as most applicable. Recognition that in Ghana there remained a preference for home births and TBAs rather than skilled attendance at delivery in health facilities, or that a lack of birth preparedness was a problem, were also frequently mentioned.

> "the Indian study is appealing to me because we have in Ghana, traditional birth attendants. In fact in some settings in the country the women attend antenatal clinic but when it comes to time to deliver,

> they deliver at home. Ok so the importance of training these birth attendants cannot be over-emphasised. So whatever should be done to enhance their skills with a view to helping them to deliver these babies will be very much appreciated."
>
> 026, academic researcher

The main reason for ranking the Indian study as least applicable/transferable was due to the national and international policy direction moving away from TBA training. The quote below illustrates this, explaining that the current policy emphasis is on skilled attendance. Some felt that the intervention would not be effective in Ghana, or noted that the reduction in maternal deaths reported in the study was not significant.

> "the least would be the.....mm...yeah this one. The traditional birth...India, yeah...because at this time we are, we are not encouraging TBA deliveries. Home deliveries, even home deliveries should be by a skilled attendant."
>
> 008, policy stakeholder

The Indian study elicited the most mixed opinions. It was frequently considered to be focused on training TBAs (although the study summary did not include this term 'TBA'), an issue which raised strong positive or negative views amongst respondents (as discussed in previous chapters).

> "this one is more like training of the TBAs which we've been engaging for, for quite some time"
>
> 058, national government staff

It was the most popular study amongst the sub-national government staff, although far less popular amongst the national government staff, policy stakeholders and researchers interviewed. This is likely to be linked to sub-

national government staff's positive perceptions about TBAs, which may be due to their relative distance (compared to national government staff) to the international policy community's move away from supporting TBA training (Starrs, 2006). In contrast, only one national government staff interviewee ranked it as most applicable/transferable (who themselves acknowledged that they did not have a background in maternal health). This may reflect the general acceptance of the international policy direction at the national level.

2.3.3 Nigerien study

A wide range of reasons were given by those selecting the Nigerien study as most applicable/transferable. Some stated they preferred it because they recognised that either transportation, communication or referral systems were a problem in Ghana.

> "a lot of our women, from my experience, have a problem with transportation because facilities are not evenly distributed and we all know that a lot of the time the pregnancy, delivery or labour starts in the night for what reason I don't understand. And transportation is a major problem and this system of getting transport owners, transport women with obstetric emergencies to facilities, is very workable here. In fact, one region, Central region has tried it and it is making a lot of impact. So I think it's something which, which can work."
>
> 045, national government staff

Other reasons included the acceptability of the intervention to the target population and the fact that it could be organised by the government so that it did not need the effort required by community mobilisation interventions (i.e. perceiving it to be relatively easy to implement). Some also felt that it

would be more sustainable because they assumed it would be funded by the government.

Cost was considered to be the main drawback of the Nigerien study. The intervention itself was considered expensive and some interviewees were also concerned about it being a pay-per-use service, feeling that people may be unwilling or unable to pay. Several wondered how many Land Cruisers would be needed or what coverage they would provide. Sustainability was also felt to be a problem, some linking this to the approach (preferring an intervention that involved the community or led to community ownership).

> "I don't know whether in Ghana people will have the money to make use of this, this intervention...I think it will be, it will be expensive and er, er, I don't know how many you can have in our rural areas, the remotest parts of the country...if you are going to use this kind of intervention. But that is the reason why I thought it should be the last one"
>
> 013, academic researcher

Researchers were more likely to consider the Nigerien study to be most applicable/transferable compared to other interviewees (although an equal number of researchers ranked it as least applicable/transferable). The reason for this difference was not clear. One possible reason could be that they were less driven to consider practical constraints such as cost, which was a common reason for ranking this study as least applicable/transferable.

2.3.4 Nigerian study

All of the explanations for ranking the Nigerian study as most applicable/transferable included the fact that an example of a similar project was currently ongoing or had previously existed in Ghana.

> "transportation is a major problem and this system of getting transport owners, transport women with obstetric emergencies to facilities, is very workable here. In fact, one region, Central region has tried it and it is making a lot of impact. So I think it's something which, which can work."
>
> 045, national government staff

Those ranking the Nigerian study as least applicable/transferable felt that there would be difficulties in implementing the intervention. They believed that people would either be unwilling or unable to pay back loans, or were concerned about abuse of the loan scheme. Some also felt it would not work because transport was not available in the communities. Concerns about sustainability were also raised, due to the risk of non-repayments of loans.

> "[*and why Nigeria last?*] loan. You gave loan. There is a mindset a loan from public sector is a gift, that should not be paid, but. So if it is a community emergency loan programme so...you establish, people will go, they will come for it. But you expect them to pay back and they will not pay back...so the programme will come to a halt. That's why I rated it last."
>
> 031, national government staff

2.4 Differences between types of interviewees

Few major differences were observed in the perceptions of local applicability/transferability between the types of interviewees. In the brainstorm, national government staff were more likely to mention issues around study design or methods than other interviewees. Few researchers mentioned these issues, possibly because they were asked about the potential applicability/transferability of their own studies and so were likely to be already satisfied with their studies' quality.

In the rating exercise, sub-national government staff seemed less able to rate the dimensions of local applicability/transferability, compared to other types of interviewees. Policy stakeholders and researchers rated the acceptability of the intervention and the political environment higher than national and sub-national government staff.

In the study ranking exercise, the Indian study was considered more applicable/transferable by sub-national government staff than other interviewees; in contrast national government staff were least likely to rank it highly. Researchers were more likely to view the applicability/transferability of the Nigerien study positively, compared to other interviewees.

The reasons given for interviewees' study ranking choices showed no clear major differences between the types of interviewee; the most important factors for all types appeared to be whether there was an awareness of similar projects, followed by the interventions' approach and its congruence with the interviewee's beliefs.

One factor that did seem to hold a different level of importance for the different interviewees was the study findings. Sub-national government staff were less likely to comment on studies' findings when explaining their ranking decisions compared to other types of interviewees. Overall those who considered the studies' findings in their ranking reasons seemed to include a large proportion of interviewees who had completed postgraduate

studies in high income countries. Researchers were more likely to express a desire for more information about the studies' findings than other types of interviewees.

2.5 Summary: Exploring local applicability/transferability

- Three techniques were used in the interviews to explore perceptions of local applicability/transferability:
  - a brainstorm
  - rating the importance of local applicability/transferability dimensions
  - ranking the local applicability/transferability of four intervention evaluation summaries
- The comparability of the study setting and the new setting was most frequently mentioned in the brainstorming; the ease with which the intervention could be implemented was also mentioned often
- The rating and study ranking exercises were often considered to be difficult
- Several noted that the relative importance of the various dimensions in the rating exercise would depend on the issue at hand
- Many interviewees found the concept of transferability particularly difficult to grasp
- Although similarities between populations and settings were considered to be important in the brainstorm and the rating exercise, they were rarely presented as reasons in the study ranking exercise
- In the ranking exercise, interpretations of the interventions and their findings differed widely between interviewees
- Reasons for study ranking decisions also varied between the studies:
  - the Tanzanian and Indian studies were often considered most

applicable/transferable because of the problems they tackled or the intervention's approach
- the Nigerien study was preferred because similar problems were recognised in Ghana
- the Nigerian study was selected because of experiences with similar projects in Ghana
- views about the Indian study generally related to interviewees' beliefs about TBAs, with some considering it to be very applicable/transferable to the Ghana context, whilst others disagreed strongly
- the Nigerien study was selected as least applicable/transferable because of the intervention's cost, coverage and sustainability
- the implementability, acceptability and sustainability of the Nigerian study were reasons why it was considered least applicable/transferable

- Few differences in the views of the various types of interviewees were observed

3. Dimensions of Local Applicability/Transferability

This section will explore the dimensions and factors considered important in terms of local applicability/transferability. As has been discussed previously, interpretations of, and views about, local applicability/transferability varied widely and a lack of understanding of transferability was common. However it remained possible to explore these issues without focusing solely on these terms, using additional explanations and examples. Through the course of analysing the data (first considering the findings from each technique individually before looking across all the data in their entirety) it became clear that the issues raised could be categorised into six dimensions. These dimensions and the factors within them will now be

discussed and differences in responses across the three questions will be considered.

The six dimensions of local applicability/transferability that were identified are:

1. Setting
2. Ease of implementation
3. Congruence with beliefs, past experiences or evidence
4. Effectiveness
5. Adaptation
6. Study design and methods

3.1 Setting

There were a number of factors that were considered important in either assessing the interviewee's setting or comparing their setting with the original study setting. These included the perceived need for the intervention, the influence of country-level influences (e.g. level of development) and population-level influences.

3.1.1 The perceived need for the intervention

The extent to which the health issue that the intervention focused on was considered to be a problem in the new setting (i.e. whether there was a need for the intervention) was an important factor raised in responses to all three techniques.

> "I think first and foremost, you must have a problem and that is why you want to address the problem. So you will look at the problem – is it a public health problem? Is it that magnitude – you know, of that magnitude that you may want to do something to help your, your country. So I think one will have to look the most important, look at the problem, the magnitude of it..."
>
> 030, national government staff

Although most spoke generally about the need, burden or priority of the health issue, a few mentioned the concept of felt need, that is, whether the population themselves felt that the issue was a health problem. Whether it was considered a political or government priority was also mentioned, as was the prevalence of the health issue (which may have been associated with, though distinct from, the government's priority).

Whether or not the intervention addressed factors that were considered to be causal determinants of the health problem also affected perceptions of local applicability/transferability. For example, a common reason for positively ranking a study as applicable/transferable to Ghana was because the interviewee recognised that the issue being tackled was also a barrier to maternal health services use, or a cause of maternal mortality, in Ghana. However as mentioned above, several cited the fact that transportation was a problem as the reason for selecting one study over another, without acknowledging that the other studies also addressed transportation issues, albeit in different ways.

"Erm, a lot of our women, from my experience, have a problem with transportation because facilities are not evenly distributed and we all know that a lot of the time the pregnancy, delivery or labour starts in the night for what reason I don't understand. And transportation is a major problem and this system of getting transport owners, transport women with obstetric emergencies to facilities, is very workable here."

[*Nigerian study ranked most applicable/transferable*]

045, national government staff

"I think the difficulty we have really is getting the people to the, the, how quickly they are moving them from the periphery to the place where they will receive the specialised care. And er, once that this is made available I think that eases the problem."

[*Nigerien study ranked most applicable/transferable*]

038, GHS researcher

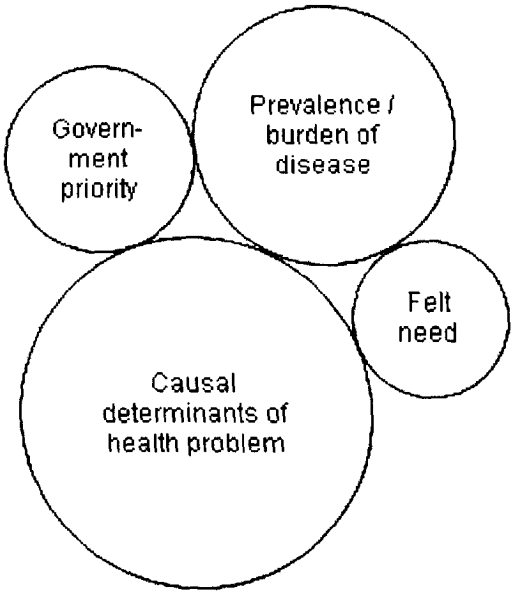
"And then secondly is, I will go for this one, the emergency transportation [Tanzanian study]... because transport is also an issue, a very big issue here in, in Ghana. I mean, getting transport to the health facilities is the most reason why people don't even go and especially the cost involved, you know, yeah. Sometimes you travel from here to the other community and this is the fare, and people cannot even afford it. So if the community can come up with something like that, you know, they all maybe coming together to put money in their coffers that if somebody, if there's the need for them to transport somebody, yeah, they can do that, I think that is also more do-able. What I wouldn't, I think wouldn't really work is this, the Nigeria, you know, the, the transport owners agree to available

> transport obstetric emergency and to charge certain fares according to distance."
>
> 043, GHS researcher

The last quote above highlights differences in the interpretation of the studies and the importance of recognising that each intervention component may involve its own distinct assessment of local applicability/transferability (which is particularly worth noting, given many interviewees only focused on certain components of the interventions, rather than considering them in their entirety). Although the interviewee suggested that the Tanzanian intervention could include a loan scheme, they did not rate the Nigerian study highly even though it included such a scheme, because they did not rate the other components of the intervention (i.e. the transport owners' agreement). Also, by referring to the Tanzanian study as 'the emergency transportation' study, they imply that they did not feel the other studies focused on this issue.

Figure 4 represents the various elements discussed within the factor, 'intervention need'. The size of the circles gives an approximate representation of their relative importance to interviewees, based on the number of interviewees mentioning each element and their perceived importance.

Figure 4: Factors influencing the perceived need for the intervention



3.1.2 Country-level influences

The geographical location of studies influenced whether or not some interviewees felt they were locally applicable/transferable. Some believed that studies conducted in West Africa may be more applicable/transferable than those conducted in other parts of Africa or in other continents. Others felt any African country was similar enough to draw lessons from and a few took an even broader view, believing that lessons could be learnt from studies conducted in any low income country.

> "...most of Africa we are almost the same. You find out that the same stories are being told in Ghana, told in Uganda, told in Kenya. The health system problems are much the same. Women are facing the same cultural barriers to accessing health, er, maternal health services and all that. So the findings are useful..."
>
> 033, GHS researcher

In the quote above a researcher explains that findings from other African countries would be applicable/transferable to Ghana, since the same causes of health problems, such as cultural barriers to health service use, existed. This suggests that by virtue of being conducted in Africa, studies will address pertinent issues and therefore will be of use in Ghana. The quote above also illustrates a commonly-held Afro-centric worldview in that, when discussing research from other countries, only African research was considered. As the quote below shows, only when probed did they consider the applicability/transferability of studies from other continents.

> "And then I would look at the characteristics of the target population third...third, why? Because again like I said, generally we are quite similar across the continent. There's not much difference in terms of... [*but if you were looking at a study that was, say, carried out in Vietnam or Cambodia or India?*] yeah that then, then I would, you know, question you know, how, because there are major socio-cultural differences...But if it was within Africa then I would say. And even for Africa I would probably look at the regions..."
>
> 012, other

Variations in the perceived local applicability/transferability of studies from different geographical locations led some to laud multi-country studies as a more useful form of international research, as the quote below explains.

> "For those that are multi-centre trials, I think they may be even be, they may even go quicker...they may even go, they may even roll out quicker...like the, the, the rotavirus vaccine trial...you know it's being done in about three African countries, so if it is shown to work, there will be many more people helping to roll it out globally, yeah"
>
> 038, GHS researcher

The quote above also reiterates the point made in the previous chapters that interviewees tended to present examples of clinical studies when discussing local applicability/transferability.

Although geographical proximity was discussed in the 'abstract' local applicability/transferability questions (i.e. the brainstorm and the rating exercise) it did not appear to influence decisions in the study ranking exercise. If geographical proximity were to have played a major role in local applicability/transferability assessments, the studies conducted in Niger and Nigeria would have been expected to have been the most popular and the Indian study the least. However this was not the case and issues of proximity were seldom mentioned in explanations of ranking decisions.

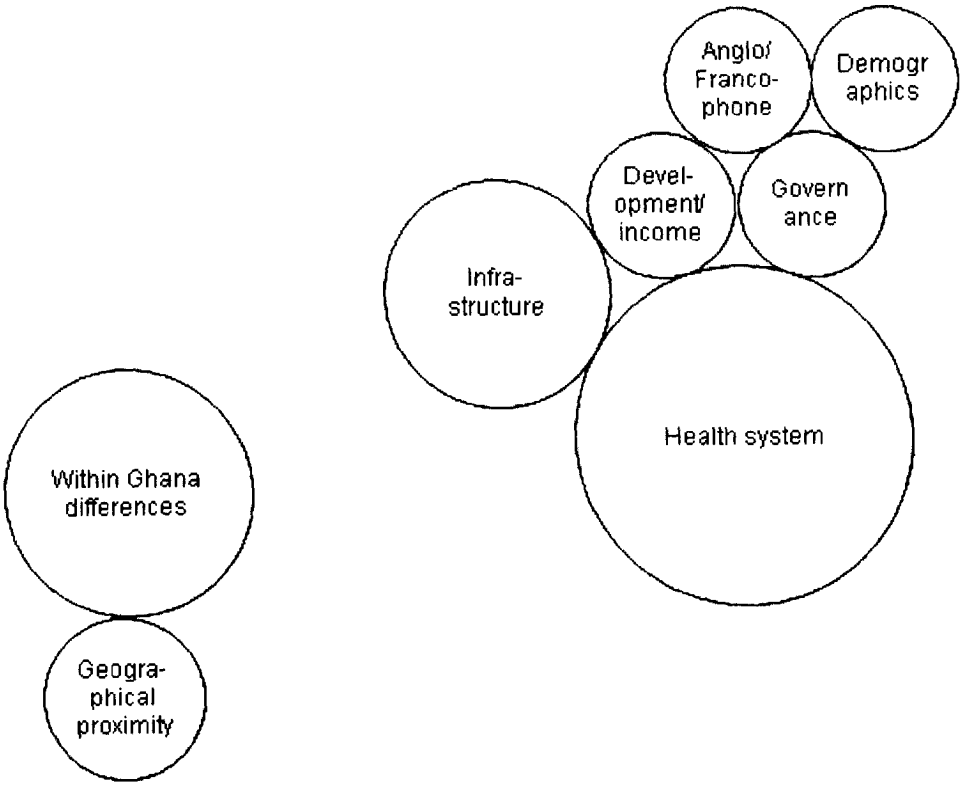
In contrast, several interviewees noted that there were differences within Ghana, which may affect the local applicability/transferability of interventions to different districts or regions. These frequently related to socio-cultural differences and so will be discussed in greater detail in the following section on population-level influences.

As mentioned above, some felt that similarities in the countries' levels of development or income levels were important in determining local applicability/transferability. Differences in governance (e.g. degree of stability or colonial history), infrastructure and the general state or strength of the health system were also mentioned. Such factors could affect health problems, for example some noted that poor or non-existent roads led to difficulties in reaching health facilities in obstetric emergencies. A few interviewees also mentioned differences between Anglophone and Francophone countries, or the similarities of country demographics. However it was more common for health system factors to be mentioned as a consideration. For example poor staff attitudes, insufficient numbers of health professionals or inadequate quality of care were cited as reasons why women may prefer to deliver at home without a skilled attendant.

> "it's only when you are able to consider the setting that you can think of resources [*and when you mean the setting, which aspects of the setting are you thinking about?*] The system, the health system...because then you can know, do we have the people already in place? And how much more do we need to add? Do we have the equipment? Do we have, so it's when you consider the setting that you can talk about the actual intervention. What do we have? Where can we start from?"
>
> 022, academic researcher

Since health system issues were more frequently discussed in relation to the implementability of the intervention (as in the quote above), rather than simply comparing these factors in the study setting and interviewee's setting, these will be discussed in more detail in the following section. Figure 5 represents the relative importance of the country-level influences discussed. The proximity of the circles reflects the similarity of the concepts they represent. For this reason, 'within Ghana differences' is placed adjacent to 'geographical proximity', as they both refer to location-specific concepts, but are separated from the other country-level influences to highlight the conceptual distinction between these two groups of concepts.

Figure 5: Country-level influences



3.1.3 Population-level influences

In the original list used in the rating exercise, there were three population-level dimensions within 'applicability': social acceptability, cultural adaptability and the educational level of the target population. Social acceptability and cultural adaptability were often discussed together and perceived to be similar concepts relating to the socio-cultural setting, or the beliefs, attitudes and values of the population.

> "I think cultural adaptability is more important than anything else...[*and what, what does that mean for you, cultural adaptability?*] It means that culturally or the way of, the lifestyle or the way people live in one country is such that you can transfer the findings of one, another country to come and influence some maternal health conditions...If culturally the findings are not going to be applicable or cultural adaptability is not possible, then you cannot bring that. Because the others – resource implications, you can transfer resources. It's very easy...But cultural and social acceptability you can not easily do it. It might take another generation, yuh. So those are very sensitive"
>
> 015, academic researcher

Social acceptability and cultural adaptability were frequently rated highly, whilst educational levels were often not considered to be relevant because interventions could be adapted such that the target population would be able to understand them, as the quote below illustrates.

> "Of course the level of education of the target population um, even if they don't understand the intervention, it is our duty to break it down because health is about somebody's body and how that person functions. So, if they don't understand it means that we, we haven't broken down what we need to break down for them to understand. So, I shouldn't think that the level of education is so much a problem in that, in that sense."
>
> 007, national government staff

In the revised list, 'population' was included as a dimension within 'applicability' and a separate dimension of 'acceptability' was also added (which will be discussed in greater detail in the section below on the capacity to implement the intervention). As with the population-related

dimensions in the initial list, population was frequently considered important. When probed, it was clear that the key issues regarding population were their beliefs, values or more general 'culture'.

Although population issues were generally viewed as difficult to change, the few interviewees who argued that they were less important explained that this was because they felt that the intervention could be adapted to suit the population, especially once the new setting's population was understood.

> "as for the population characteristics, yeah, that, that comes but you have to, yes you have to know the population characteristics in order to adapt the intervention...if the characteristics of the population differ, then you may have to do extra things to make it work. So for example it may be easier dealing with education than with non-, uneducated people. And you have to find ways of overcoming those things..."
>
> 022, academic researcher

As discussed above, some felt that there were sufficient similarities to allow the application and transfer of studies from other countries in West Africa, Africa or low income settings in general. However when it came to considering population-level influences, despite these broad similarities, many interviewees noted that there may be differences even within Ghana, either between urban and rural settings or between different parts of the country.

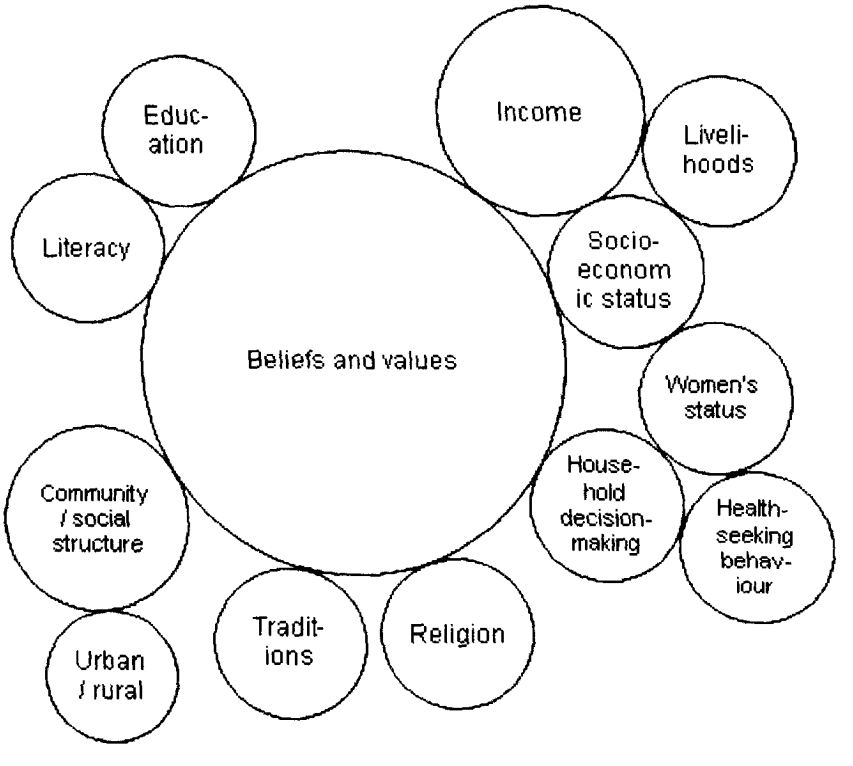
> "But when it comes to the population, it's more complicated [to compare than settings]...even within Ghana, there's a variation...what, if you go to, say, even within Accra if you go to the coastal communities, their approaches to doing certain things will be different from somebody living in, say, Ridge or in the Airport area, that sort of thing. They are, there are differences. There are differences between how some things will be done in, say, the Eastern Region compared to Greater Accra Region. So...if you

want to carry out intervent-, then you must look at the target population in some closer detail and not assume that because they have something similar with another part of the country, another, or a different country, that approach would work. There...are differences and this is where probably the -social sciences or the anthrop-, anthropologists would come in. So that kind of, you understand, you understand it."

060, sub-national government staff

Other population-level influences mentioned included socio-economic status, livelihoods, whether they lived in urban or rural settings, the status of women or locus of decision-making power in the household, health-seeking behaviours, the community or social structures and their religion. Figure 6 represents population-level influences.

Figure 6: Population-level influences



3.2 Ease of Implementation

There were two key components that affected the perceived ease with which the intervention could be implemented; the characteristics of the intervention itself and the new setting's capacity to implement it. The sustainability of an intervention was a third component which was repeatedly mentioned and was also clearly considered to be important when considering an intervention's potential.

3.2.1 Characteristics of the intervention

The characteristics of the intervention included the general content of the intervention and its approach (e.g. involving training, a loan scheme or a community empowerment approach), who the providers were and the implementation challenges faced.

The characteristics of the intervention were important because they affected the perceived ease with which the intervention could be implemented in the new setting (and were also associated with capacity to implement). However the perceived ease of implementing interventions in the study ranking exercise varied widely between interviewees. The two quotes below illustrate how perceptions of the same study differed.

> "because, you know, if you, it's like the problem that they identified here [in the Nigerien study]. The private use of the, of the vehicle. You know when you need it to transport an emergency, probably the director's car is broken down he'll want to use the ambulance to do something else. You know, uh-huh. But of course, [in the Nigerian study] people can take a loan and pay it, depending on the arrangements for repayment, they can be able to. But this one, tendency for abuse, is higher"
>
> 008, policy stakeholder

> "[*and what's the reason that you haven't put [the Tanzanian study] as number one or number two?*] yeah, because, hmm, planning can take time...and it can drag, while people are dying. In this one they can plan...You see that is why I'm putting [it ranked as] number three. But these [the Nigerien study] are just, they are implementing it, you see...they are immediately implementable."
>
> 037, sub-national government staff

One of the most critical factors frequently mentioned as affecting perceptions of local applicability/transferability was the cost of implementing the intervention. This was linked to perceptions of the availability of resources in the new setting.

> "I wouldn't go for the is it the Niger one?...no, I wouldn't go for that at all. It would not, it won't work here because I mean, it's too capital intensive. Having a landcruiser, that's expensive, having a radio-communication system, it's damn expensive. So we will not have the money to scale up, that definitely won't work."
>
> 003, policy stakeholder

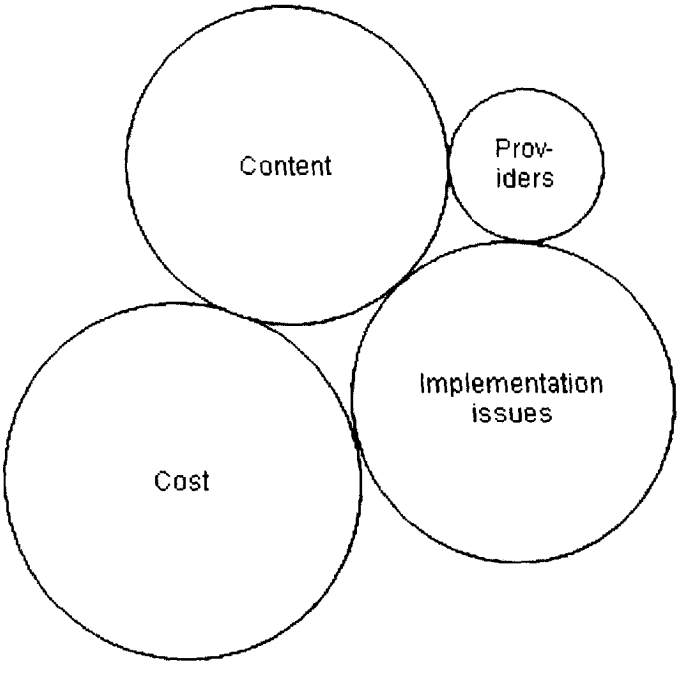
Information on implementation was particularly desired in the study ranking exercise, when interviewees were asked if there was any additional information they would have liked to have had to inform their ranking decisions, as the quote below illustrates.

> "I would probably be interested in knowing, you know, exactly who, which agencies were involved in implementing this...I mean, like in...the Niger case, it doesn't, this information says 'context: rural Niger' but it doesn't really say what scale this was done, I mean was it done in one sub-district or one district or was it done more widely than that? And, you know, what exactly did it cost? I mean I would

want to know...just in general more information but probably the scale of the activity and who was involved in doing it."

001, policy stakeholder

Figure 7: Intervention characteristics



3.2.2 *Capacity to implement the intervention*

The affordability of the intervention was clearly considered to be important and was associated with both the intervention characteristics and the resources available in the new setting. Several interviewees pointed out that the term 'resources' did not refer solely to financial resources, but to human resources too, both in terms of numbers of staff and their skills and abilities.

> "Capacity issues are also a major issues that can affect implementation, as I said. We don't have the people, a-ha. So you also need to, actually also lobby to get the intervention implemented,...[to get] the appropriate and adequate personnel..."
>
> 008, policy stakeholder

Political will was also mentioned as a factor that could influence whether the intervention could be successfully reproduced in the new setting; several noted that where there was political will, resources were more likely to be made available. Political will was also considered within discussions of the need for the intervention or priority of the health problem, as well as being considered one aspect of acceptability.

> "Political and resource...they will be the most important ones. [*why?*] Because if political environment, you need to have the commitment of those who are going to provide the resources. You need to find out how committed they are to achieving the goals they have set. And of course that then has implications for resource. One of the biggest problems for us on the continent has been resource gaps."
>
> 012, other

The acceptability of the intervention was another factor that was frequently considered important in the rating and study ranking exercises.

> "well I think the, the cultural adaptability to me is number one...because that...is the most difficult thing to change. So if it is not culturally acceptable, if you bring a study that says that er...Muslims should stop washing their hands. It won't work...[laughs] and then no matter what you do...you know, so, that that one makes it very, very important, to me...I always like to add the cultural and religious,

> acceptability as one...and they will always be very strong. Always very difficult to change, ok."
>
> 011, national government staff

The quote above illustrates two points aside from the importance of acceptability. Firstly, although the interviewee begins by talking about cultural adaptability, it is clear that he is not referring to the adaptability of the intervention but to its cultural (or 'social') acceptability. This illustrates the point made earlier that cultural adaptability and social acceptability were frequently considered together as one and the same. The second point that the quote illustrates is the view held by some that acceptability (as with other population-level influences) would be very inflexible and difficult to change.

Acceptability was influenced by the characteristics of the intervention. For example in the study ranking exercise, concerns about the acceptability of the intervention were mentioned more often with regards to the Nigerian study than the Indian study because a loan scheme was considered to be more contentious than training.

> "The trouble I have with this [the Nigerian study] is the establishing the loan scheme, it's er, I'm not sure how it will work. People are very sceptical about handing over their money to somebody else to look after and hope that the money will be available. Even with the insurance it's taking a lot of politics to get people to say contribute towards this for your health and use it so I'm really sceptical about this one."
>
> 020, national government staff

As mentioned earlier, acceptability was also associated with population-level influences. The quote above explains that the sceptical views of the public may inhibit acceptance of the loan scheme. It exemplifies frequently

raised concerns about the loan scheme which were associated with the nature of the intervention and its implementability. In the quote the interviewee also draws on Ghana's own experiences, in this case with the National Health Insurance Scheme (NHIS), as a way of assessing potential acceptability. The use of experiences drawn from previous or existing policies and programmes in Ghana is discussed further below, within the dimension of 'congruence' (section 3.3).

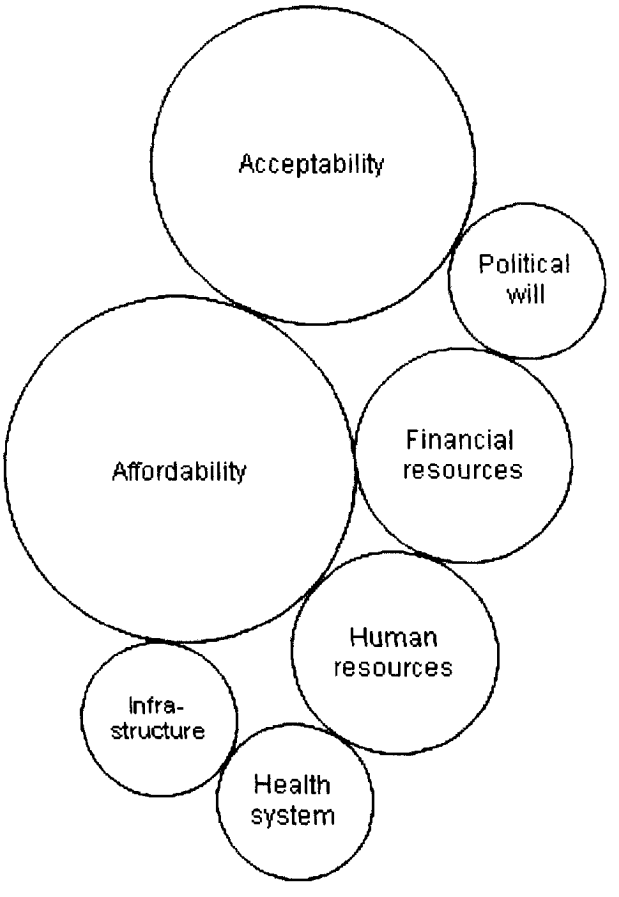
Although most interviewees focused on the acceptability of the intervention to the target audience, political acceptability and the acceptability of the intervention to providers were also occasionally noted as potentially important factors.

Other factors that were suggested as affecting the capacity to implement the intervention included the health system and the general infrastructure (e.g. whether there were accessible roads may affect the ability to successfully implement an ambulance scheme). The quote below illustrates this point.

> "And then the implementation, it may be easy elsewhere because they have certain systems in place. How easy is it to do the same thing here? Do we have those systems in place that made it easy, that became a vehicle for them, carrying out those things?"
>
> 064, sub-national government staff

Figure 8 below represents the factors affecting perceptions of the capacity of the new setting to implement an intervention.

Figure 8: Capacity to implement an intervention



3.2.3 Sustainability of implementation

Although rarely mentioned spontaneously in the brainstorm or the rating question (though it was not included as one of the dimensions in the rating question lists), the extent to which an intervention was perceived to be sustainable was a common reason offered in the study ranking exercise.

> "I want to know the cost of installation, the cost of the equipment, yes, and its lifespan, these are, we're not to know that. It's [solar panels] not something that you put on top of the building and then within three weeks or within three years you say, oh, replace, you need to recharge the battery because we are dealing with villages, we don't have the resources and er, we shouldn't make it in such a way

> that...villages will ultimately come to depend on external donors, you know, for assistance. We must be able to put in something that will make the villagers own the programme...But in a village where you have a Land Cruiser, who maintains it? Sometimes you may get a Land Cruiser but there's no money to buy fuel...All these things must be put in there, yes, unless you have an external donor who says, look, any time the Land Cruiser breaks down, please, write to me, I'll send you money to repair it. But then the villagers become dependent."
>
> 047, academic researcher

The quote above also illustrates the importance of the study approach and how it influences the interventions' sustainability. Sustainability could be conceptualised as a factor within effectiveness (looking at the duration of effects), rather than implementability. However in the study ranking exercise it was mainly discussed in reference to the implementation of an intervention; only occasionally was it mentioned in terms of seeing long term impacts of the intervention. As was discussed in previous chapters (and will be discussed in greater detail in the section 3.5 below on 'effectiveness'), this is likely to be related to the fact that more emphasis was placed on successful implementation than on an intervention's effectiveness (which was generally assumed, so long as implementation was successful).

3.3 Congruence

This dimension refers to the congruence of the intervention evaluation with the interviewee's knowledge and beliefs. Although congruence was clearly important in assessing the local applicability/transferability of intervention evaluations in the study ranking exercise, it was rarely mentioned in the brainstorm, nor in the rating question (although it was not a listed dimension in the lists).

Three types of congruence could be conceptualised from the interview data. The first was congruence of the study with the interviewee's beliefs and values, the second was its congruence with the interviewee's previous experiences and the third was its congruence with other evidence known to the interviewee.

3.3.1 Congruence with beliefs and values

Congruence with beliefs and values was a powerful factor, as could be seen by the decisions relating to the Indian study, which were closely associated with interviewees' views of TBAs (as discussed earlier).

> "Yeah, this other one, rural India one, women and their primary family care givers, those we call the TBAs, we call them traditional birth attendants here. They also have relevance to us, indeed since 1988 um, a year after the, the Nairobi conference, safe motherhood conference, you know we started training traditional birth attendants. Because we recognised that in this part, in our part of the world, in Ghana, very many women deliver at home, in fact I was delivered at home, my father was a traditional healer so, you know, he assisted my mother in delivering me, you know. Yeah. And in the northern regions as I've told you, virtually every home has a traditional birth attendant. So, if we are able to use them, I mean, to train them to recognise risk factors and be able to do referral that would be fine."
>
> 047, academic researcher

> "I would think it is *wrong*. [*the India one is wrong?*] yes. Why do you train home birth attendants in home based life saving skills. I am against that programme. I am *against* that programme! And I'll tell you why I'm against this programme. Because they are, and I'm being vehement. Because this is

> called being meddlesome. What are you teaching them to do? A woman in labour who has an emergency must be moved. Straight to a government inst-, sorry not a government, to the next level. They will be tinkering with it! I think that thing is OUT! Home based life saving skill is a non-starter."
>
> 019, academic researcher

The importance of the perceived value of the intervention's approach (e.g. community empowerment) became clear in the study ranking exercise. Several interviewees mentioned the benefits of involving the community or ensuring community ownership of an intervention, both to enhance its sustainability and for its general success. As mentioned above, it was a major factor in the preference shown towards the Tanzanian study.

> "I'm interested in this, the Tanzania one. Community empowerment approach and [*why?*] basically because I think it involves the whole, it involves the community, they could have an action plan to deal with this situation and the fact that the cost of emergency also came down and so dealing between the community and the transport system."
>
> 020, other

3.3.2 Congruence with previous experiences

The congruence of the intervention evaluations with interviewees' previous experiences came out strongly in the study ranking exercise. When interviewees knew of a similar intervention, this overwhelmed their applicability/transferability assessment, preventing many interviewees from considering any of the other factors of applicability/transferability. Some interviewees were even unable to rank the studies because they were aware of similar interventions that had been done in Ghana already. It was often the case that they only considered the intervention they had

experience of, rather than those presented in the exercise, even where the intervention they knew of varied substantially from that presented. Most of the examples cited by interviewees did not seem to have been formally evaluated; however their effectiveness appeared to be presumed.

> "I don't know how you want us to place [the studies in order of local applicability/transferability]...because all of these have happened [in Ghana]."
>
> 056, policy stakeholder

> "You know, so for me, these are things that we are really doing so, yes...so it's all applicable, I mean, here, because we're already doing that"
>
> 030, national government staff

3.3.3 Congruence with other evidence

Congruence of the intervention evaluations with other evidence, such as other studies' findings, was mentioned very rarely. This is not especially surprising, given that effectiveness research was not valued highly in general (as discussed in the previous chapter). Further discussion of the issue of the neglect of effectiveness research will be presented later in this chapter and in the following chapter.

3.4 Adaptation

The adaptation of the intervention, to tailor it to suit the particulars of the new setting, was considered crucial. Indeed for many it was such an intrinsic aspect of research use that they did not necessarily consider it to be part of an assessment of local applicability/transferability. Rather, it was

conceptualised as a separate phase and was often considered to be inevitable or essential.

> "I don't think you can, I think it's very difficult to take any one programme and cookie-cutter it, to any, to any other country at all. You can't, like again, you can't, there's basic fundaments to all programmes that, that are applicable anywhere...so the skeleton you can move from country to country, but it's the meat on those bones that has to change drastically."
>
> 004, policy stakeholder

Some, as exemplified in the quote below, rated adaptability as less important specifically because it was an intrinsic part of research use and therefore not essential when judging whether or not research could be of use in the new setting.

> "Adaptability is more of looking at the, that one there is no research that, no matter what happened you don't adapt. So for me it's generic...so for me, it's neither here nor there"
>
> 049, national government staff

The adaptation of interventions was given as a reason why certain dimensions were considered less important in the rating exercise. For example it was explained that differences between the study setting and new setting could be overcome by tailoring the intervention for the new setting.

> "you know if you accept that adaptability of the intervention, that is an important thing then setting becomes less important because you would adapt it to the setting in, in Ghana."
>
> 057, policy stakeholder

Some emphasised the need to understand the issues or factors present in the new setting, in order to adapt it appropriately. These were similar arguments to those discussed in the previous chapter, where understanding the context was considered critical to the development and success of interventions. In the study ranking exercise, suggestions were made regarding how the study could be adapted for the Ghanaian context.

> "It's, maybe the Land Cruiser [in the Nigerien study] may be expensive for the project but there are other means which are equally comfortable. You could maybe get ambulance instead of the Land Cruiser. Perhaps, I don't know the cost of ambulance but the ambulance has a more specific, you know, whatever, than the Land Cruiser for me. So we could change that but I would say that for all the four interventions we can, you know, sieve out what to do in layers, they are all important."
>
> 032, national government staff

Only a small number of interviewees mentioned the potential implications that adaptation may have on effectiveness. More often was it suggested that adaptation was necessary for successful implementation (which was a prerequisite for effectiveness). This links back to the point noted earlier, that emphasis was placed more on implementation than the effectiveness of an intervention.

3.5 Effectiveness

Within effectiveness there were two distinct yet interlinked elements that could be considered: the effectiveness of an intervention in the original study and its potential effectiveness in the new setting. An intervention's potential effectiveness in a new setting could be assessed using a number

of factors, including the original study's findings, past experiences and other evidence, or the intervention's characteristics.

Effectiveness was not one of the key issues discussed in the brainstorm, nor was it mentioned as one of the most important dimensions of the revised list in the rating question (it was not included in the original list). As discussed above, the second part of the lists (referring to transferability, or potential effectiveness of the intervention, to the new setting) was often not considered at all, particularly when the researcher did not provide additional prompting.

It seemed that interventions were generally assumed to be inherently effective, as long as it was possible to implement them successfully. This assumption persisted even where findings were presented in the study ranking exercise. Most interviewees did not seem to consider the studies' findings when assessing the local applicability/transferability of the intervention evaluations. Those that did generally mentioned them as secondary reasons for their ranking decision.

> "And then emergency preparedness, transporting, is also a problem. So, if we are able to negotiate with the private transport and then agree that in every obstetric emergency they should be there to transport them, I think that will work out."
>
> 027, sub-national government staff

Three of the four studies presented results for more than one outcome variable. On those occasions where the findings were considered, interviewees rarely discussed all of the variables presented but focused on those indicators that they recognised as being a problem in Ghana. For example, most of those who mentioned the results of the Tanzanian study focused on the positive finding that the cost of emergency transportation fell, with less considering the percentage of villages which had developed action plans or used their implementation systems. This may be because

transportation costs were recognised as a problem in Ghana. Only a few expressed disappointment that only 19% of villages had used their implementation systems in the last three months.

Interpretations of the findings from the Indian study were particularly complex, since some variables indicated positive findings, whilst others showed no effect or were not significant. Some interviewees focused on the proxy indicators of birth preparedness to highlight the reasons why the intervention was successful, noting that a lack of birth preparedness was also a problem in Ghana. Others explained that the intervention wasn't successful because the number of referrals didn't increase. Some discussed the decline in maternal deaths as a positive finding, either ignoring explicitly or implicitly the lack of power needed to be confident that the result was not due to chance but reflected a real intervention effect. A few did explicitly rule out the play of chance, feeling that the decline represented a definite, positive impact, whilst others felt that the lack of power made the findings unclear or unusable.

> "Incidentally I think I would rather start with rural India as the one that I would go in for. Because I think that, well maybe part of it is because we have more information provided but I think that looking at the case in Ghana I think the point of people not preparing early enough for childbirth is a huge thing and I think that it is one of the things that this study was able to improve that 82% had birth preparedness plan in place, whereas...before the intervention it was only about 15% and also a huge number had saved money, about 77 had made transport arrangements and all those, another 77 were aware of a referral site. So it sort of gives a general idea of people who are well prepared for delivery...But I think also remarkably is the

> fact that the number of deaths have decreased even though it is said that the population wasn't large enough to know if that was significant or not."
>
> 017, policy stakeholder

The quote above illustrates the point made earlier, that findings were linked to recognised problems in Ghana, in this case, a lack of birth preparedness. It also presents an example of a positive interpretation of the maternal death results, in spite of an awareness that the decline may be due to chance. In contrast, the quote below does not mention the improvement in the birth preparedness indicators, nor the decline in maternal deaths, but rather discusses the lack of an increase in health care use which, as they state explicitly, is their own focus in Ghana.

> "I'm reluctant to put rural India because er...what we want to see is an increase in the utilisation of the health facilities and that is missing here in that even though a huge number became aware of the referral point, it, it really didn't translate so much into them accessing the facility and that would probably be as a result of other factors such as transportation systems which are not available or er, could even be money."
>
> 018, policy stakeholder

Most interviewees did not consider the potential effectiveness of the interventions. Those that did were more likely to base their judgement on factors other than the studies' findings (which were rarely explicitly considered). Some judged potential effectiveness based on their perceptions of the situation in Ghana and the intervention's approach. In line with the findings from the previous chapter, implementation was often associated with potential effects, as the quote below illustrates.

> "the women in the rural India, I would go for that, because that looks more do-able, yes. Because, I mean, if, if women are educated, you know, a lot on what they need to do and then you give them, just trust them, I mean let me use the word trust, that they would, they can take care of their own health. I think that would work better than the health institutions, or the health centres imposing something on them, so I think this, this would really work."
>
> 043, GHS researcher

Many discussed examples of other projects or programmes that had previously or were currently running in Ghana in relation to potential effectiveness. Although evaluations of these programmes were almost never discussed, reference was commonly made to whether or not they were considered successful and/or effective.

> "this is very applicable [*Tanzania?*] yes Tanzania because we've seen that in the [name of] area in the [name of region], taxi drivers were mobilised and you know, they were transporting pregnant women to hospital so, you know, it works...the communities came together and they identified cars, you know, this birth preparedness that if something happens then, so, it works...so that is my first one."
>
> 054, sub-national government staff

As exemplified in the quote above, terminology such as 'it works' were often used when discussing other known examples of projects. It was not always clear whether interviewees were referring to the project's impact on outcomes or their successful implementation of interventions (although based on the previous chapters' findings, these may have been considered analogous). Indeed when terms such as 'effectiveness' or 'cost-effectiveness' were used by interviewees, they sometimes held broader

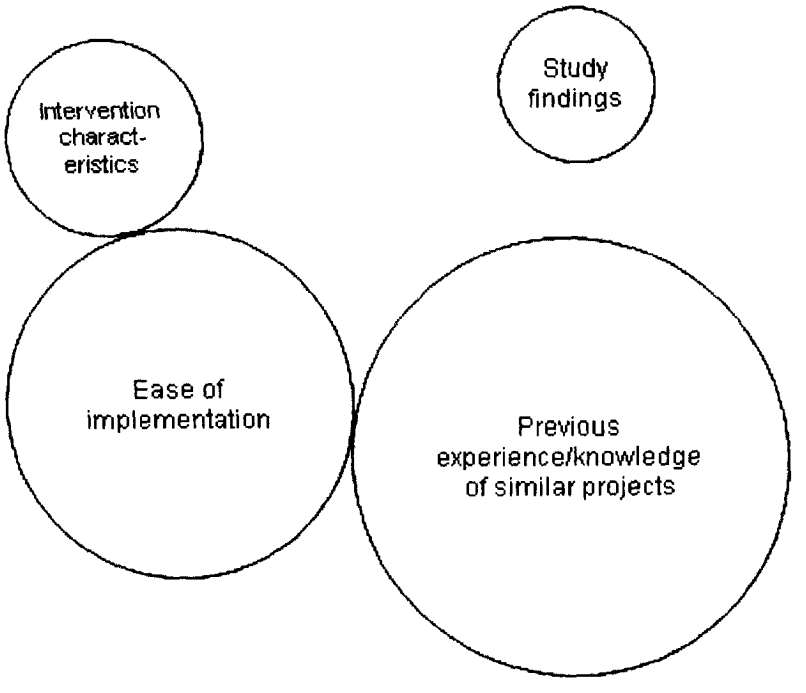
meanings than those used in academic terminology (as discussed in the previous chapter).

> "I will take number three [Indian study], I will take this one...because this is life saving and it's, it's cost-effective...transferring simple skills to reduce mother and child health. And this, mother and child health is an indicator worldwide to measure the health of any community. And if this simple strategy can reduce it, then we will improve world health."
>
> 037, sub-national government staff

In the quote above, the interviewee reasons that the study is cost-effective, although the summary provided mentioned neither the intervention's cost nor cost-effectiveness analysis. It may be that they felt the intervention would be 'low cost' rather than cost-effective. They appear to base their judgement of its potential effect on the perceived simplicity of the intervention and its approach; they do not mention the study's findings when explaining how it could "improve world health".

A few mentioned that it would always be necessary to evaluate or pilot any intervention that was being implemented in a new setting. It may be that, as mentioned in the previous chapter, these proposed evaluations would focus more on assessing the implementation of the intervention rather than its effectiveness. Figure 9 represents the relative importance of the factors affecting perceptions of the potential effectiveness of an intervention when implemented in the new setting.

Figure 9: Potential Effectiveness



3.6 Study design and methods

Issues of studies' design and the research methods used were not included in the rating lists and so did not feature highly in responses to those questions. However it was mentioned by some interviewees in the brainstorm, particularly by national government staff.

> "I think, ok, you would look at the methodology for instance, see if it [was] sound. You will look at er, the methodologies, the methodology is sound and er, the process."
>
> 030, national government staff

Few researchers mentioned issues of study design and methods, which may be due to the fact that they were generally asked about the local applicability/transferability of their own research. In such cases it would be

expected that they knew and accepted their own methods and so these were not considered to be important factors in their decisions.

In the study ranking exercise, few discussed methodological issues. Of the small number that did, the key factors appeared to be the sampling methods used, the scale or coverage of the intervention or the internal validity of the findings. A few also expressed a desire for more information about the findings. For example some wanted more detail about the analysis, data comparing the outcome measures to those experienced prior to the intervention, or wanted to know what results would have been observed if the intervention had not taken place.

> "[*what else could I have told you?*] Well maybe just want to find out, you know, the number of women that were, although it's stated anyway, that [...*reading*...] – and then we don't know whether it was due to chance, I mean they don't know the exact numbers that is stated as to whether it is, I mean, there a lot of women who were involved in it or maybe just few women and how long was this study done, you know, what, was it, um, I mean was it done in only one area, was, did they have a control group to compare it with? You know, I mean something like that, yeah, I just wanted to know."
>
> 043, GHS researcher

4. Framework of Local Applicability/Transferability

To summarise, six dimensions of local applicability/transferability were identified from the interview data, as shown in table 9 below. Some of the dimensions, such as 'ease of implementation' map clearly onto Wang et al.'s definition of applicability, whilst 'effectiveness' could be located under their definition of transferability (Wang et al., 2006). However the remaining

dimensions could be associated with either applicability or transferability, hence justifying the conjoined term.

Table 9: Framework of local applicability/transferability

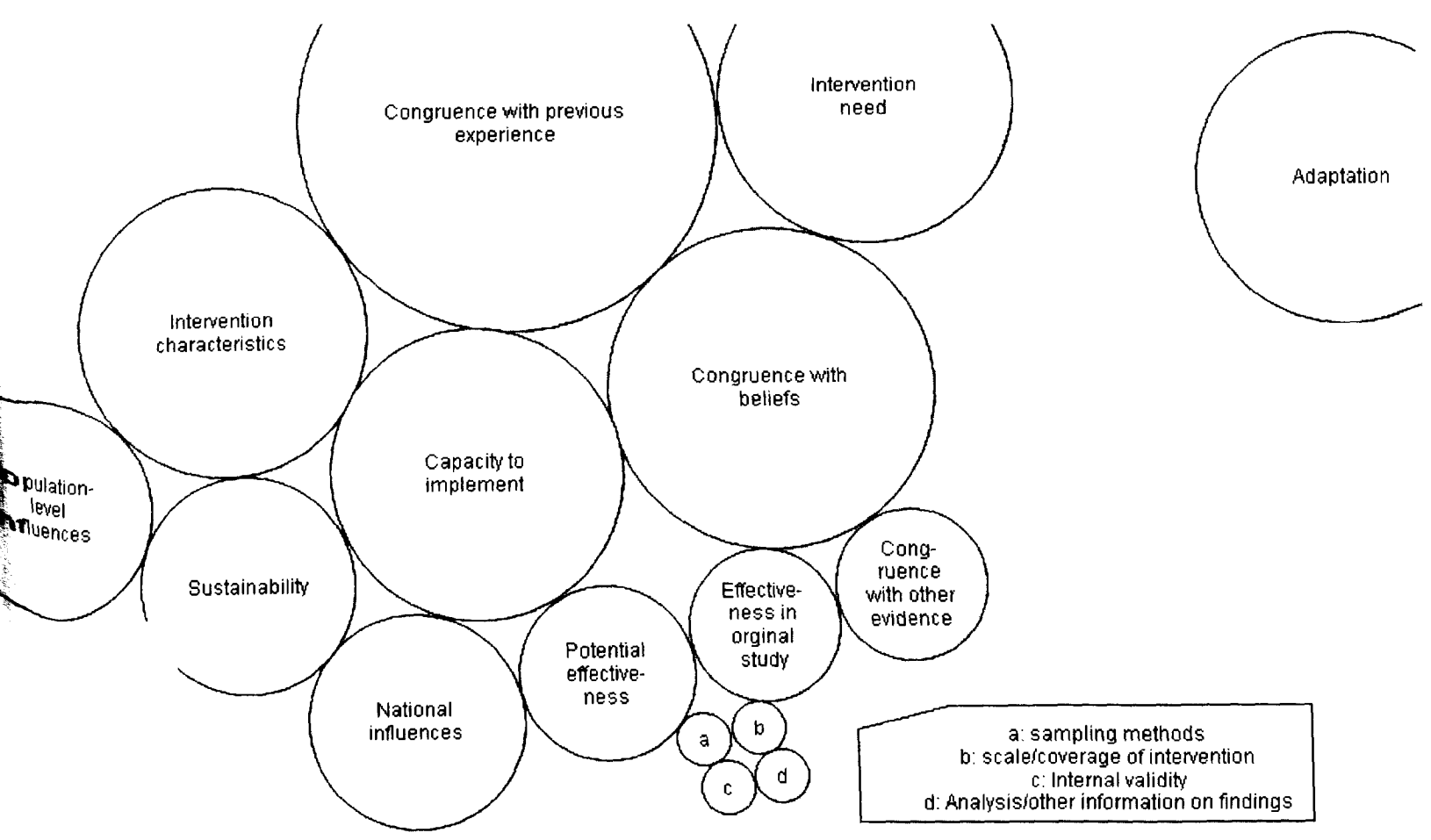
Dimension	Factors
1. Setting	a. Intervention need b. Country-level influences c. Population-level influences
2. Ease of implementation	a. Intervention characteristics b. Capacity to implement c. Sustainability of implementation
3. Congruence	a. With beliefs and values b. With previous experience c. With other evidence
4. Adaptation	
5. Effectiveness	a. Original study findings b. Potential effectiveness
6. Study design/methods	a. Sampling methods b. Scale/coverage of intervention c. Internal validity d. Analysis/other information about findings

The most important dimensions appeared to be the ease of implementation and the congruence of the study with existing knowledge, experience and beliefs.

Several factors were identified within each dimension (except adaptation). The most important factors discussed were the perceived need for the intervention (1a), the characteristics of the intervention (2a) and, particularly, the study's congruence with previous experiences (3b). The adaptation of interventions was another dimension that was considered to be crucial (4), so much so that for some, it was considered to be a distinct, essential stage in the research use process rather than a dimension within local applicability/transferability. The congruence of the study with the interviewee's beliefs and values was also important (3a), whilst its congruence with other evidence known to the interviewee (3c) was rarely

mentioned. Effectiveness was also less important, with little emphasis placed on the effectiveness in the original study (5a). Judgements of the potential effectiveness of an intervention (5b) were more often made on the basis of the perceived ease of implementation or knowledge of similar projects than on the original studies' findings. The study design and methods were rarely mentioned. When they were, the key factors appeared to be sampling (6a), the scale or coverage of the intervention (6b), and validity (6c).

Figure 10 below shows the relative perceived importance of the factors within local applicability/transferability. The bubble sizes approximate the relative perceived importance of the factors. The separation of 'adaptation' reflects the fact that many interviewees considered it to be a distinct phase of research use, rather than part of a local applicability/transferability assessment.


Congruence with previous experience
Intervention need
Adaptation
Intervention characteristics
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National influences
a
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c
d
a: sampling methods
b: scale/coverage of intervention
c: Internal validity
d: Analysis/other information on findings

5. *Discussion: Local Applicability/Transferability*

5.1 Exploring local applicability/transferability

Population and setting similarities were considered important in the brainstorm and rating question, yet rarely featured in the study ranking responses. This may reflect how responses differ between abstract questions (as in the brainstorm and the rating question) and more realistic assessments of local applicability/transferability (as in the study ranking exercise). This may have implications for future research into local applicability/transferability, which should be cautious of using abstract assessments rather than more realistic approaches.

Interviewees gave varying reasons for ranking each of the four intervention evaluations, rather than comparing them all on the same dimensions. For example, an interviewee may have stated that they rated the Tanzanian study as more applicable/transferable to their setting because of its approach, but gave the cost or lack of acceptability as the reason for ranking the Nigerian study as least applicable/transferable. This suggests that (as mentioned by some who were unable to rate the dimensions in the earlier rating question) the relative importance of the dimensions would depend upon the intervention being evaluated.

Given the differences in perceptions of research and research use that were observed between the different types of interviewees (as discussed in the previous chapter), perceptions of local applicability/transferability could have also been expected to vary. However, only minor differences were observed. The lack of major differences between the four types of interviewees could be due to a number of reasons. It may be that researchers, government staff and policy stakeholders do indeed all consider local applicability/transferability in the same way. However a lack of an observed difference may not represent a 'true' lack of difference. It may be that the interviews and analysis were simply unable to show differences (a particular problem if the differences are subtle)

It is possible that, as a relatively abstract concept which is normally considered implicitly rather than explicitly, interviewees did not have, or were unable to express, clear, fully-formed opinions about local applicability/transferability, leading to a variation in responses that lacked a clear pattern.

If there are no major differences between types of interviewees (particularly between researchers and government staff/policy stakeholders), a number of conclusions could be drawn. Firstly, such a finding does not support the 'two communities' model of research and policy, which would expect the perspectives of researchers and decision-makers to differ. Secondly, it suggests that it may be relatively easy to encourage consideration of local applicability/transferability issues in both research reporting and research use (at least easier than if researchers and decision-makers were unable to agree on the important dimensions to be considered).

The few differences that were observed have plausible explanations. The fact that national government staff were more likely than their sub-national counterparts to consider study design and methods may reflect the greater likelihood that they had formally studied research methods. It could also reflect a greater awareness among national government staff of the international policy communities' emphasis on research quality. Sub-national government staff were less likely to consider study findings. It may be that researchers and policy stakeholders placed more emphasis on the political environment than government staff because the latter, being 'within' the political environment, were more likely to place emphasis on external factors.

5.2 Dimensions of local applicability/transferability

5.2.1 The lack of importance placed on evaluations of effectiveness

Whether the interviewees knew of similar projects that had been, or were being, conducted in Ghana seemed to have the strongest influence on perceptions of local applicability/transferability. Knowledge of a similar project seemed to make it difficult to consider the intervention and evaluation findings presented to them. Formal evaluations of these similar projects were rarely mentioned. This could have serious implications for the potential use and utility of intervention evaluations.

Many interviewees also focused on whether they felt the intervention would be easy, or at least feasible, to implement. Overall it seemed that there was less emphasis on comparison, either between studies, or between the study setting and the new setting, with more attention paid to the potential implementation and effect in the new setting. Little attention was paid to the results presented in the study ranking exercise, even amongst those considering the potential effectiveness of the intervention in the new setting.

One explanation for the lack of attention to the studies' findings was that it was difficult to compare their effectiveness since (as is typical for these types of complex public health intervention evaluations) they measured different outcomes and were not large enough to be sufficiently powered to measure health impact (i.e. maternal death). However, given earlier findings that effectiveness research was not especially valued as a type of research, at least for complex public health interventions, it is fair to hypothesise that this lack of emphasis on comparability or effectiveness was the main reason for the lack of influence of the studies' findings on ranking decisions.

That the studies' findings were rarely considered leads to the question of whether intervention evaluations should expect to be of potential use outside the original study setting. Although changes to study reporting (e.g. including more information about the beliefs of the population, the health

system or implementation issues) could potentially increase the perceived utility of research from outside, this would not address the fundamental lack of importance ascribed to rigorous evaluations of effectiveness.

Even where study outcomes were considered, interviewees rarely appeared to draw on all the variables measured, which could lead to differing interpretations of findings. It is also clear that using different outcome measures in different studies inhibits the potential comparability of studies' effectiveness. Presenting findings for which the study lacked sufficient power could also lead to differing (and incorrect) interpretations of findings.

However for those proponents of intervention evaluations, there remains hope. Several interviewees commented on the value of multi-country studies, as one way of increasing a study's power to convince decision-makers about its applicability/transferability to their setting. Whether the effectiveness of multi-country studies is more likely to be considered than the findings from single country studies remains to be seen, however it could be one way of increasing the use of foreign research. The perceived value of multi-country studies also has potential implications for the perceived utility of systematic reviews, since these may also draw on findings from a number of countries. The findings from this chapter suggest that reporting certain types of information (e.g. around implementation issues) could maximise the potential benefit of multi-country studies and systematic reviews.

5.2.2 The importance of adaptation

In the interviews the adaptation of interventions was clearly considered to be a crucial, if not essential, aspect of research use. For many, it seemed to be a separate, distinct phase of research use rather than a component of local applicability/transferability assessments. However few explicitly considered how adaptation may affect the potential effectiveness of the

intervention. The alteration of the potential effectiveness through the adaptation of an intervention is an issue that has been noted in the literature. The tension between remaining faithful to the original intervention and adapting it to suit the new setting has been subject to several theoretical papers (Backer, 2001; Castro et al., 2004; Morrison et al., 2009). These papers, exploring the so-called 'fidelity versus fit' debate, frequently call on researchers to identify which elements of the intervention they evaluated should be considered 'core' and which were more amenable to adaptation without altering the effectiveness of the intervention. However they rarely suggest how researchers could identify such core elements. Hawe et al. consider the issue in relation to complex interventions (Hawe et al., 2004a). They suggest that fidelity is important for the process and function of the intervention content, rather than the content itself. This allows flexibility in the adaptation of the intervention content to suit a particular setting.

It appears that, since this is such an important issue for decision-makers, improving understandings of how researchers could identify which elements (including processes or functions) were essential could help decision-makers to ensure that, if they do adapt an intervention, they retain the intervention's key features. Yet such work may not be of value in Ghana, given the interviewees' focus on implementation rather than effectiveness. It could be hypothesised that they would prioritise 'fit' over 'fidelity'. Indeed it is possible that effectiveness would be considered more likely if the intervention was adapted to suit the new setting, regardless of the nature or extent of the adaptation.

Another issue related to adaptation arises from the finding that interviewees tended to focus on individual components of an intervention, rather than considering its multi-components as a complete package. In these cases it is likely that, if they decide to use the intervention in their own setting, they may choose to adopt only one component, rather than the whole. This may have important implications for the potential effectiveness of those

interventions that have been designed so that the various components work together synergistically. It also highlights questions about what should be considered to be the 'use' of research; in such circumstances if asked about their research use, they may cite an example of research use, even though the intervention had been substantially modified and adapted for the new setting. This reiterates the point made in the previous chapter, that 'research use' is not a simple and straightforward, one-dimensional 'action'.

Chapter 6:
Conclusion and Recommendations

1. Introduction

This chapter provides a summary of the study's main findings in relation to the broader literature on research, decision-making and research use in low income settings and the local applicability/transferability of research. Consideration of the implications of these findings will follow. The potential utility of the conceptual framework and the strengths and limitations of the study will be discussed, before recommendations for research and practice are presented.

2. Overview of Main Findings

This study aimed to investigate perceptions of the use and usefulness of maternal health research for decision-making in Ghana. In particular, it explored the dimensions of local applicability/transferability that were considered important by researchers, national and sub-national government staff and policy stakeholders.

2.1 Research production context and challenges

There were a range of research producers active in Ghana, including academics, Ghana Health Service (GHS) researchers, as well as professionals/practitioners whose research was secondary to their main role and Master of Public Health (MPH) students. Maternal health research studies had been conducted on a range of topics, with most aiming to define health problems (either in terms of calculating prevalence or exploring the causes or nature of the problem). Several studies explored the implementation challenges faced by the health service generally, or by specific policies and programmes. Fewer aimed to assess policy or programme options. Previous studies conducted internationally or in other countries (in both maternal health and in public health more generally) also

found that as a rule, more research has been conducted on the determinants and prevalence of health problems than on the evaluation of possible solutions (Luck, 2000; Macintyre et al., 2001; Anderson et al., 2005; Petticrew et al., 2008).

Interviewees noted challenges for research production in Ghana, particularly around funding, as well as in setting the research agenda. Although some felt the funding situation had improved in recent years, this appeared to have mainly focused on certain key areas such as HIV and malaria. There appeared to be no specific funding sources for maternal health research. Some felt they would only be able to get funding if the research was on a topic that linked maternal health with another issue that had dedicated research funding, such as malaria. Collaboration with high income country researchers seemed to be useful when seeking funds.

There is evidence from the published literature that supported this notion of an 'imbalance' in the funding available for different topics of health research. Ijsselmuiden et al. pointed out that the focus of health research in low income countries has mainly been on diseases such as HIV, for which there is more international commitment and investment (Ijsselmuiden et al., 2008). In contrast, maternal health has repeatedly been noted to be a lower priority in the global arena (AbouZahr, 2003; Buse et al., 2006; Powell-Jackson et al., 2006; Shiffman and Smith, 2007).

Research funding and agenda setting were recognised by interviewees as being strongly linked, such that the government (which assigned little funding to research) had limited influence on research agendas. This may change in the future, with the development of the government's health research agenda, however this agenda is likely to remain inhibited if the government is unable to realise the ring-fencing of two percent of the health budget for research. Other developments, such as the Ghana-Dutch collaboration, present opportunities to encourage a Ghana-led research agenda in spite of the lack of in-country funding. This collaboration could be considered an example of a knowledge translation approach, as it attempts

to develop links and exchange between researchers and potential research users in setting the research agenda and throughout the research process (Lavis, 2006). However they did not appear to include a common knowledge translation strategy, that is, tailored and targeted dissemination activities (Dobbins et al., 2009). The dissemination methods appeared to be consistent with those commonly used in Ghana (i.e. reports and dissemination events).

The lack of funding for health research in low income countries has been reported in the academic literature, with simultaneous awareness of the difficulties faced by low income stakeholders in setting their own research agendas (Ramsay, 2002; Ali et al., 2006; The Bamako Call to Action: Research for health," 2008). Such debates have coincided with calls for more funding for research in low income countries and an increasing appreciation of the importance for low income countries to set their own research agendas. High profile meetings such as Global Ministerial Forum for Research on Health (held in Mali in 2008) and substantial reporting in prestigious journals such as The Lancet have helped to raise awareness and galvanise support for research funding and agenda setting in low income countries (Wolffers and Adjei, 1999; The Bamako Call to Action: Research for health," 2008; The State of Health Research Worldwide," 2008; Bennett et al., 2008a; Ijsselmuiden et al., 2008; Whitworth et al., 2008).

Whether low income governments and donors meet their proposed rates of investment in health research funding (two percent and five percent of health budgets and aid respectively) remains to be seen. Some have pointed out that calls for and promises of greater research funding have been made previously, with little effect (Bennett et al., 2008b). As yet, little change in the way donors fund research has been seen, although the time needed to see changes to funding distributions has been noted (Bennett et al., 2008a). A study of knowledge translation support by national and international funding agencies in low and middle income countries found

greater commitment to knowledge translation amongst national funders, compared to international (Cordero et al., 2008). Indeed, they considered the neglect of knowledge translation by international funders to be "worrisome" [p530]. However there have been some innovative exceptions in funding, of which the Ghana-Dutch Collaboration is one example ("Ghana-Netherlands Health Research for Development Programme. Demand Driven Research Partnership Programmes,"). Another is the Wellcome Trust's 'African Institutions Initiative', which aims to strengthen African research capacity as well as enable local research priority setting (Looi, 2009).

2.2 Concepts of research

2.2.1 Broad concepts of research

Conceptualisations of research were broad. This may in part be due to the "conceptual confusion" [p92] that others have also noted, which can lead to the interchangeable use of terms such as 'research', 'evidence' and 'knowledge' (Scott-Findlay and Pollock, 2004); (Lin and Gibson, 2003). However aside from this semantic ambiguity, it remains clear that research beyond the narrow, academic definition was highly valued for use in policy in Ghana. The value of these broader forms of research has been recognised in the research use literature. Lomas et al. noted that outside the research community, broad definitions of 'evidence' prevail (Lomas et al., 2005). They conceptualised scientific evidence as being either context-sensitive or context-free and labelled other non-scientific evidence as 'colloquial' evidence. Despite awareness that academic research alone is not sufficient to inform public health and policy and that other informal research, routine data, monitoring and experience are needed, much of the literature on evidence-based public health remains firmly focused on the narrower, academic definition of research (Kohatsu et al., 2004; Pablos-Mendez and Shademani, 2006). The debate around broadening the

evidence base for public health (compared to evidence for evidence-based medicine) revolves mainly around the importance of including a wider range of academic disciplines and methods (such as qualitative research) rather than the consideration of non-academic research (Kohatsu et al., 2004; Anderson et al., 2005; Mays et al., 2005; Davies et al., 2008).

2.2.2 'Big' versus 'small' research'

Research was dichotomised into two broad categories: 'big' research, which was formal and academic and 'small' research, which included applied, small-scale qualitative studies and operations research. 'Small' research was highly valued, due to its speedy completion and focus on topics pertinent to service delivery, whereas 'big' research was not always considered necessary. Although the terminology of 'big' and 'small' research has not been used in the academic literature, it is not entirely unrelated to the categorisation of mode one and mode 2 knowledge production, although the latter do not relate to the scale of the research but rather its flexibility and dynamism (Nowotny et al., 2003). Mode 1 refers to traditional, academic research and correlates with the Ghanaian concept of 'big' research. Mode 2 refers to practical, applied, contextual knowledge which is created by a broader range of trans-disciplinary producers and approximates to the 'small' research discussed in the interviews.

Although recognising the importance of both contextual, academic research (i.e. beyond efficacy or effectiveness research) and local information, there appears to be little acknowledgement of 'small' research in the public health literature (Lomas et al., 2005; Lambert, 2006). However, this may be changing, as it has been suggested that operations research (one form of 'small' research) is a sub-category of health policy and systems research, an area of health research currently promoted by the World Health Organisation (WHO) and high profile journals such as The Lancet and the Bulletin of the WHO (Bennett et al., 2008a; Bennett et al., 2008b; Mills et

al., 2008). In line with this, there have been several articles published recently that explore the use and extol the usefulness of operations research, particularly for low income settings (Walley et al., 2007; Ryman and Dietz, 2008; Theobald et al., 2009; Zachariah et al., 2009; Parkhurst et al., 2010).

2.3 Types of valued research

'Small' research was preferred and operations research was particularly highly valued by interviewees. Most interviewees preferred research that focused on implementation challenges or helped to define health problems, rather than research assessing policy options. Other studies in low income countries have found a similar preference for operations research, routine data and surveillance as well as smaller, less rigorous studies in public health (Tomson et al., 2005; Behague et al., 2009; Woelk et al., 2009).

Effectiveness research was not highly valued with regards to public health. Woelk et al. also found that international effectiveness research was not always considered necessary (Woelk et al., 2009). Their respondents explained that other forms of local evidence may be sufficient and foreign studies were perceived to be irrelevant or inapplicable.

Perceptions of the use of interviewees' own research was highest amongst 'non-researchers' (those non-governmental organisation staff or health professionals whose research was secondary to their main role). This was because they tended to report using their own studies' findings themselves. GHS researchers were generally more positive about the use of their own research than academic researchers, which may be due to their stronger links with government decision-makers. These findings concur with the well-accepted notion that links between researchers and decision-makers increase the likelihood of research use (Innvaer et al., 2002).

2.4 Attitudes to the evidence-based movement

There was buy-in to the concept of evidence-based policy, although there appeared to be some misconceptions about it. It was accepted that although it was strived for at the national policy level, it was not always the reality. An earlier study of information needs for health policy in Ghana similarly found that research information was considered "very essential" for all levels of decision-making (Adjei et al., 2001). A study conducted in Canada also found support for the principle of evidence use by health decision-makers, although upon further investigation those interviewed expressed some confusion, scepticism and challenges to evidence use (Bowen et al., 2009). There is a possibility that the initial enthusiasm expressed in the interviews reflects a social desirability bias, particularly given that the researcher came from an academic institution in a high income country. The expressed support and enthusiasm for the ideal of research use in decision-making should therefore be interpreted cautiously.

2.5 Levels and routes of policy influence and research use

2.5.1 International influence

There was recognition of the influence of international agencies and global policies on national decision-making and research use in national policies. Views and attitudes towards this international influence were mixed. Similar findings have been reported in other low income country studies. Woelk et al. found that donors and international agencies strongly influenced malaria control policies in three African countries (Woelk et al., 2009). A study of research and policy in Kenya also found a strong global influence, which was viewed negatively as pushing policy onto the country without national involvement (Lairumbi et al., 2008). A study of evidence-based maternal and neonatal policy-making in five low income countries (including Ghana) found evidence of a strong international influence (Behague et al., 2009).

They also noted mixed views, with some participants viewing this influence as an 'imposition'. This type of forced use was added to Weiss's seminal categorisation of research use, as 'imposed use' (Weiss, 1979; Weiss et al., 2005). Although the example of imposed use presented by Weiss was from the United States of America, it seems likely that this type of research use may be common in low income settings.

2.5.2 Sub-national decision-making

In Ghana's decentralised health system, government staff at the regional, district and facility level observed a substantial degree of autonomy and flexibility in implementing national policies. Sub-national government staff reported greater challenges in finding out about research and held more mixed opinions about the use of research in policy compared to their national counterparts. There was an indication (for example from the High Impact Rapid Delivery, HIRD, policy) that sub-national decisions were more likely to use routine data or 'small' research, whilst national decisions were more likely to be informed by 'big' research, among other things. There was also recognition that research use and policy influence could flow upwards, from sub-national to national levels, as well as the more commonly noted 'top-down' route.

Other studies' findings concur with this. An earlier Ghanaian study also noted that awareness of research was particularly problematic at sub-national levels (Adjei et al., 2001). Behague et al. found that sub-national decision-makers preferred operations research and observational epidemiology (Behague et al., 2009). Both studies found that the sub-national level emphasised the need for research that responded to programmatic/operational questions. This also highlights the fact that decision-makers need different types of questions at different levels, depending on the type of decision.

There appeared to be a greater disconnect between sub-national and international perspectives than between national and international views. The controversial example of traditional birth attendant (TBA) training is one example that highlights this disconnect. Whilst generally no longer accepted as an appropriate intervention by those in the international policy community and at the national government level, at the sub-national level several government interviewees felt that such interventions remained worthwhile. Behague et al's multi-country study also found mixed views around the TBA debate (Behague et al., 2009).

2.6 The need for improved understanding of local applicability/transferability

The regional GHS Health Research Centres (HRCs) had broader remits than the areas covered by most of their studies or dissemination efforts. In addition, it was noted that within-country differences meant that studies conducted in one area may not necessarily be applicable/transferable to other areas within Ghana. As such, improved understandings of local applicability/transferability could enhance the appropriate use of Ghanaian research in other areas of the country.

There was a tendency for interviewees to focus on Ghanaian research, neglecting to consider foreign studies when discussing the use and usefulness of research. This inclination towards own-country research has also been found in other studies. Adjei et al.'s study on information needs in Ghana similarly focused more on Ghanaian research (Adjei et al., 2001). Woelk et al.'s study in three other African countries also found a preference for local, in-country research, with studies conducted elsewhere perceived as "distant" (Woelk et al., 2009).

Despite the preference for Ghanaian research, when probed it became clear that foreign research was considered used and useful in Ghana, although neither its appropriateness nor its use were considered automatic.

There were strong views that it should not be used indiscriminately, which again points to the need for better understandings of local applicability/transferability.

Numerous studies have noted that research must be considered 'relevant' if it is to be used by policy-makers (Adjei et al., 2001; Innvaer et al., 2002; Dobbins et al., 2004b; French, 2005b; Colby et al., 2008). There has been recognition for the need to understand local applicability/transferability, particularly for international systematic reviews or global policies (Lavis et al., 2004; Gruen et al., 2005; Dobrow et al., 2006; Schunemann et al., 2006). However this study is one of the few that have attempted to empirically explore the issue to date.

2.7 Dimensions of local applicability/transferability

Local applicability/transferability was found to be a complex area for many interviewees. Many were unable to prioritise the dimensions that could be considered when assessing local applicability/transferability, either because they felt that they were all important or because it would depend on the issue being considered. One reason for the difficulties experienced may stem from the fact that assessments of local applicability/transferability are rarely explicit or formal (Dobrow et al., 2006).

There was little understanding of the concept of transferability (in terms of the likelihood that similar effects would be seen in the new setting as were observed in the original study). There was a tendency of interviewees to focus on the issue of applicability, i.e. considering the ease with which the intervention could be implemented in the new setting. This correlates with the finding that effectiveness was generally assumed, once an intervention was successfully implemented.

Six dimensions within local applicability/transferability were identified from the interview data. These and their component factors are presented in table 10.

Table 10: Framework of local applicability/transferability

Dimension	Factors
1.Setting	a. Intervention need b. Country-level influences c. Population-level influences
2. Ease of implementation	a. Characteristics of the intervention b. Capacity to implement c. Sustainability of implementation
3. Congruence	a. With beliefs and values b. With previous experience c. With other evidence
4. Adaptation	
5. Effectiveness	a. Original study findings b. Potential effectiveness
6. Study design/methods	a. Sampling methods b. Scale/coverage of intervention c. Internal validity d. Analysis/other information about findings

The dimensions considered to be most important when assessing local applicability/transferability were the ease of implementation (2) and the study's congruence with existing knowledge, experience and beliefs (3). Of all the factors, the most influential appeared to be the study's congruence with previous experiences (3b), the need for the intervention (1a), its characteristics (2a) and the study's congruence with beliefs and values (3a).

Congruence with previous experience (3b) was very influential, to the extent that some found it difficult to assess the intervention evaluation presented or consider its findings because their own knowledge and experience overwhelmed their judgement. Previous studies have also noted the importance of congruence. Woelk et al. found prior experience of interventions was important in influencing research uptake in a study in

three African countries (Woelk et al., 2009). Weiss and Bucuvalas found that studies which users rated highly in terms of their conformity with expectations (including being consistent with previous knowledge and compatible with ideas and values) were more likely to be rated useful and used (Weiss and Bucuvalas, 1980).

Congruence with beliefs and values has also previously been recognised as being an important factor affecting the likelihood of research use. A systematic review of perceived barriers and facilitators of research use found that research which confirmed a policy or self interest was considered a facilitator (Innvaer et al., 2002). A study of Canadian employment-related decision-makers found the most commonly cited barrier to research use was that it went against departmental philosophies, priorities, strategies or realities and that research going against opinions or interests was another important barrier (Lavis et al., 2001). Bryant et al. found that ideology affected the types of knowledge incorporated into political processes (Bryant, 2002).

When asked more abstract questions (i.e. in the brainstorm and rating question), the similarity between the study context and population (1c) and the new decision-making context and population was considered to be important for local applicability/transferability. However this was not reflected in responses to the study ranking exercise. Lavis et al. reported similar findings in a qualitative study of healthcare managers and policy-makers in Canada and the UK, who were asked abstract questions about their use and perceptions of research (Lavis et al., 2005). The dimensions of local applicability that they most commonly cited were similarities of the environment, ethno-cultural and demographic groups and the contemporaneousness of the research.

In line with the finding that effectiveness research was not highly valued, little attention was paid to the original study's findings (5a) when considering local applicability/transferability in the study ranking exercise. Judgements of the potential effectiveness of an intervention were more

commonly made on the basis of the perceived ease of implementation (2) or knowledge of similar projects (3b) than on the original studies' findings (5a). Woelk et al. also found that the perceived ease of implementation and sustainability were key factors affecting decisions about malaria control options (Woelk et al., 2009).

The study design and methods used (6) were rarely mentioned as important factors in assessments of local applicability/transferability. Lavis et al. found that many healthcare managers and policy-makers in Canada and the UK were prepared to assume that research was conducted and interpreted appropriately (Lavis et al., 2005). This provides a possible explanation of why they were not considered important in the current study.

Adaptation (4) was considered to be crucial, although it was often conceptualised not as a dimension within the assessment of local applicability/transferability, but rather as a distinct, essential step in the research use process.

The dimensions most commonly included in other local applicability/transferability frameworks and checklists were the setting (particularly comparing the study and new setting), the characteristics of the intervention and its effectiveness or acceptability (Schoenwald and Hoagwood, 2001; Cuijpers et al., 2005; Gruen et al., 2005; Bonell et al., 2006; Green and Glasgow, 2006; Lavis et al., 2006a; Schunemann et al., 2006; Glasgow et al., 2007; Taylor et al., 2007; Lavis et al., 2009). They were less likely to include criteria specifically considering the new setting's characteristics, implementation issues or congruence. Few appear to have been developed based on the views and perceptions of potential users of the framework, nor do they appear to have been tested with this audience. As such, the current study advances knowledge in this field by developing a framework based on an analysis of the views of researchers, decision-makers and other policy stakeholders. Findings from the current study suggest that existing frameworks do not reflect the factors considered to be most important in Ghana.

3. Implications

3.1 Concepts of global and essential national health research

Although the interviewees did not explicitly discuss the concepts of global and essential national health research, important implications arose nevertheless. The fact that some interviewees felt that certain studies conducted in Ghana may have been of use to decision-makers elsewhere, but were not of use to those within the country, suggests an implicit recognition of the concept of global research.

The appreciation of multi-country study designs implies that these may be a valuable form of global research. This may also have implications for the perceived utility of systematic reviews, which often combine studies from a range of countries.

The fact that several interviewees discussed clinical studies when asked about the use of foreign research suggests that this research may be more likely to be considered global than public health research. Those who felt that all complex public health interventions would need to be evaluated in-country, regardless of the existence of foreign research, clearly conceptualised it as essential national health research.

There appeared to be an understanding of the need for both global and essential national research, since there was recognition that foreign research may be of use in Ghana, but that if it were to be used, local research would still be required. An appreciation of the importance of local research for decision-making has been presented in the academic literature (COHRED, 1990; Lomas et al., 2005; Dobrow et al., 2006; Behague et al., 2009; Lewin et al., 2009). However the international research and policy communities do not appear to have fully accepted this, given the lack of specific funding available for national research (i.e. where the agenda has been set by those within the country).

3.2 The role of global policy

Although not without its own challenges, there has been a push in recent years to base global policy on research evidence (Niessen et al., 2000; Behague et al., 2009). The adoption of evidence-based global policies at a national level can therefore be considered one form of research use. However issues arise when the evidence base is not considered to be applicable/transferable by those in-country (e.g. as was the case presented by some interviewees who had negative views of the imposition of what they considered to be inappropriate global policies on Ghana).

Since the adoption of global policies is being encouraged, whilst at the same time national research remains under-funded, it could be argued that there is an implicit assumption that if low income countries' policies are to be evidence-based, they must draw on research findings from outside their own settings. Thus there is a lack of appreciation of the importance of in-country research for decision-making, as well as a clear need for improved understandings of local applicability/transferability.

The fact that low income countries such as Ghana are encouraged to adopt global policies has implications for their own, in-country research use. It could be argued that where policies from outside are either imposed on or adopted voluntarily by a country, this reduces national decision-makers' scope for using research themselves in forming their own decisions and policies. The focus on global policy adoption at the national level also fails to recognise the importance of the implementation and interpretation of (both international and national) policies at the sub-national level and the potential for research use at this level. These arguments support the current shift away from global policy towards global guidance, which is more explicitly expected to be interpreted, applied and adapted to local country settings[18].

[18] Personal communication with John Lavis, 16th April 2010

3.3 Implications for the evaluation of maternal health interventions

Effectiveness research was not found to be highly valued. The lack of importance placed on evaluation may be specific to maternal health interventions, which tend to be complex. Such interventions are generally considered to be highly context-sensitive, which may reduce their perceived applicability/transferability even to different areas of the same country or to different time periods. Their relative importance may also link with the value placed on other types of research which answer different types of policy questions (e.g. about implementation challenges). Maternal health interventions are also difficult to evaluate. Outcome measures may not be standardised, such that the findings from two similar studies may be difficult to compare. Some require large sample sizes in order to have sufficient power to detect statistically significant effects. For these reasons, the appropriateness or need for effectiveness research (particularly using rigorous study designs such as randomised controlled trials - RCTs) for public health has been questioned by some (Victora et al., 2004; Rosen et al., 2006; Sanson-Fisher et al., 2007). However the extensive debates about the appropriateness of RCTs for public health interventions and what methodological developments are needed for their evaluation seem somewhat extraneous in the Ghana context, where so little emphasis is placed on effectiveness research.

The difficulties experienced in evaluating complex public health interventions, combined with the fact that such research is not highly valued by decision-makers, raises the question of whether resources should be provided for such studies. However there remains a strong case for rigorous evaluation. Complex interventions are often implemented on a large scale and so use a great deal of resources. These resources would be wasted if interventions were ineffective and, if they were harmful, they could have a negative effect on large numbers of people. It is also clear from historical examples that policies and interventions that have been

assumed to be effective may not necessarily be so (Miller et al., 2003; Petticrew, 2003). For these reasons the evaluation of complex interventions remains important.

There are several options for encouraging the use (and appreciation) of research in general, and effectiveness studies in particular, in Ghana. Given that there was greater acceptance and recognition of the value of monitoring and evaluation within programmes and policies, one option could be to attempt to locate effectiveness research within this area. An alternative strategy could build upon the expressed desire for information about implementation. This supports the arguments made in the public health literature for the inclusion of process evaluations and better reporting of contextual information in intervention evaluations (Kirkwood et al., 1997; Rychetnik et al., 2002; Arai et al., 2005; Wiggins et al., 2006).

A final point to be noted is one raised by Weiss, stressing the importance of both 'inside evaluation' as well as independent evaluations (Weiss, 1993). The former may be more likely to be used, due to its congruence with decision-makers' values and the fact that they are more likely to be conducted by, or involve those implementing, the policy or programme (or at least those who have a vested interest in it). However, independent evaluation remains essential for challenging assumptions and presenting a broader perspective. As such, it could be theorised that whilst 'inside' evaluations may be more likely to be used instrumentally, independent evaluations may play a greater role through their enlightening use (Weiss, 1993).

3.4 Implications for the evidence-based movement in Ghana

Although the international policy community has embraced the ideals of the evidence-based movement, this does not appear to be reflected in all of their policies and practices. Donors rarely provide funds for countries to conduct research on issues chosen as priority concerns by those in-

country[19]. Until low income countries are able to set their own research agendas they will either continue to rely on 'small' studies or be expected to look elsewhere in order to use research to inform decisions, which raises local applicability/transferability issues.

The lack of appreciation of evaluation, a central tenet of the evidence-based movement, could lead to the conclusion that more training, advocacy, awareness-raising and capacity building are required, so that decision-makers in low income countries can understand the importance of assessing, rather than assuming, effectiveness in public health. Yet it should be noted that the evidence-based movement was initiated in high income countries and has, arguably, a positivist worldview. As such, it could be considered to be a Western concept (McQueen, 2002). The movement's definition of research, (i.e. academic research, particularly focusing on effectiveness research), fails to recognise other types of research (such as operations research), which are highly valued in Ghana. Likewise, some have argued that the Western-centric, positivist world view of effectiveness research raises questions about the appropriateness of 'imposing' it onto low income countries (Powell, 2006). The push to encourage the use of research in low income countries could therefore be construed as an example of a top-down, 'imperialistic' model that is now being 'imposed' on low income countries such as Ghana.

National decision-makers may feel obliged to buy-into the concepts of the evidence-based movement in order to appease those holding funds and other resources. However, given power imbalances between donors and recipients, combined with the overwhelming dominance of the evidence-based ideology in high income countries, those at a national or sub-national level may not feel in a position to explicitly discuss and negotiate the fundamental constructs and ideals of the movement. The potential for imposed use in these situations should not be down-played.

[19] As previously mentioned, two notable examples are the Ghana-Dutch collaboration and the Wellcome Trust's 'African Institution Initiative'.

The perceptions of research in Ghana may inhibit international agencies or donors from providing funds for research. If more research funds are made available, at present it is likely that the types of research conducted would not be those desired by some parts of the evidence-based movement (i.e. small studies focusing more on implementation or defining health problems, rather than evaluating policy options) .

The lack of emphasis on evaluation and the broad definitions of research in Ghana suggest that there may be potential impediments to the applicability of the concept of evidence-based decision-making itself. The extent to which the concepts of the evidence-based movement will be accepted and adopted in reality in Ghana remains to be seen. Just as the ideology, assumptions and methods of evidence-based medicine have been transplanted to the fields of public health (albeit with some modifications of the methods used), so is this now being attempted in low income countries. It could be argued that it is time for the ideologies and entrenched assumptions of the evidence-based movement to be re-negotiated, rather than imparted wholeheartedly without debate or discussion.

3.5 Implications for maternal health policy and research

Despite its inclusion in the Millennium Development Goals, maternal health remains a public health issue that has lacked attention and political prioritisation (AbouZahr, 2003; Buse et al., 2006; Shiffman and Smith, 2007). This is reflected in the lack of dedicated sources of maternal health research funding, unlike other health topics with funds such as the Global Fund for AIDS, Tuberculosis and Malaria.

Across the globe, effectiveness research on complex interventions is a relatively weak area for maternal health (Burchett and Mayhew, 2009a). As such, it could be argued that more evaluations of complex maternal health interventions are needed. However in Ghana there appeared to be little demand for such research. Despite the lack of effectiveness research in

maternal health and the lack of perceived need for it, there remains an argument for evaluations of complex maternal health interventions. There have been a number of interventions in maternal health which were widespread until research studies found them to be either harmful or not effective (Miller et al., 2003). There is a well-publicised lack of progress in the field, despite the fact that simple and effective clinical interventions are known (AbouZahr, 2003; Campbell, 2006; Penn-Kekana et al., 2007). Although much blame is laid at the feet of national and international decision-makers for weak political commitment and insufficient resources, it could still be argued that there lacks a solid evidence base which could provide guidance on how to achieve coverage of these clinical interventions, given resource constraints (Burchett and Mayhew, 2009a).

4. Reflections

4.1 Methodological challenges

As mentioned in chapter 2, there are a number of difficulties encountered when attempting to study perceptions of local applicability/transferability. Research use is not only direct and instrumental but may also be tactical or enlightening (Weiss, 1979). These forms of use are more difficult to study and attention is often focused on direct use. Although this study did not attempt to explore research use per se, this common bias towards direct research use may have influenced interviewees' responses.

The concept of local applicability/transferability is abstract and its assessment is often informal (at best) or implicit (Dobrow et al., 2006). The fact that the concept is rarely considered explicitly may explain some of the difficulties encountered when asking interviewees to discuss the topic.

There were several commonly used terms, such as 'research', 'research use' and 'evidence-based', whose meanings may be assumed but are not

necessarily construed similarly by all. The interviews highlighted broader conceptualisations of research than would be considered by those within the evidence-based movement. Without awareness of these potential differences, misunderstandings and misinterpretations of the data are a risk.

4.2 Usefulness of the data collection techniques

Beyond the more general issues discussed above, the specifics of the techniques used to explore perceptions of local applicability/transferability will now be considered.

4.2.1 The interview question order

The brainstorm question was asked first, in order to explore interviewees' initial perceptions without risk of bias introduced by the researcher. It could be argued that responses to the study ranking exercise may have been biased by the presentation of the list of local applicability/transferability dimensions in the preceding rating question. However this does not appear to be the case. The terminology used in the rating question was rarely employed in responses to the ranking exercise; nor were responses framed in terms of the two distinct issues of applicability and transferability. The factors considered to be important in the ranking exercise did not match those mentioned in the previous questions, which could also suggest that the interviewees' responses in the latter exercise were not formulated using the dimensions presented to them earlier.

4.2.2 Different responses to different questions

Differences emerged in the dimensions and factors considered important in the three techniques which addressed local applicability/transferability. There are several possible explanations for this. Firstly, the brainstorm and

rating question were somewhat abstract, whilst the ranking exercise involved decisions about actual studies, albeit in an 'unnatural' decision-making context. This in itself may explain some of the differences. To answer the more abstract questions it is possible that they brought to mind a particular example of a study which helped them to answer the question. In several cases, it became clear that the studies they were considering were clinical, with short causal pathways between the intervention and the effect. Therefore when presented with more complex public health interventions in the ranking exercise, they may have found different dimensions and factors to be of importance.

4.2.3 Study ranking exercise

Although the study ranking exercise was a useful tool for encouraging discussions of local applicability/transferability issues beyond the abstract, it should not be considered a means of gaining insights into how real decisions are made.

Assessments of local applicability/transferability in the 'real world' generally do not appear to be systematic or explicit. Given that there lacked a structured approach to seeking research for decision-making, it would be logical to presume that assessments of local applicability/transferability would take place as and when decision-makers became aware of research. Whether these would be revised at the time of decision-making is unclear.

It is unlikely that four policy or intervention options would be presented together in same format and through the same medium in order that a decision could be made. It is also unlikely that four discrete intervention options would be explicitly assessed together at the same time, allowing direct comparison of the advantages and disadvantages of each. As such, the study ranking exercise was an artificial and unrealistic representation of decision-making. Nevertheless, it allowed real examples of intervention evaluations to be considered, so moving the discussion from the abstract to

a more realistic level.

4.2.4 Utility of the local applicability/transferability framework

The framework developed in chapter 5 sets out the various factors that government staff, policy stakeholders and researchers may consider when deciding if a study conducted elsewhere is of use to them. Unlike other frameworks, it was developed based on analysis of qualitative data, rather than theoretical ideas and assumptions.

It is unlikely that a framework such as this would be used explicitly by decision-makers for the assessment of a study's local applicability/transferability, due to the nature of both decision-making and research use. However it remains may be of use in a number of other ways. For example, it may be of use to researchers as a means of highlighting the types of data that they could collect and report, in order to enhance local applicability/transferability assessments of their research (as well as in their synthesis within systematic reviews). It could also be used to encourage the appropriate use of research; possibly being employed by those taking on a 'knowledge broker' role, or those conducting evidence syntheses. The utility of the local applicability/transferability framework is not limited to research use alone. It could also be used to assess the local applicability/transferability of interventions or policies that have not been evaluated. Indeed, given the findings discussed above, it seems more likely that in Ghana, if it were used at all, it would be for this purpose, rather than for assessing intervention evaluations.

4.3 Reflections on the study's conceptual framework

4.3.1 Usefulness of the original applicability/transferability framework

The central component of the study's conceptual framework presented in chapter 2, was based on Wang et al.'s framework of applicability and

transferability (Wang et al., 2006; Au, 2007). As far as the researcher is aware, this was the first attempt to test the utility of their framework amongst decision-makers. Few details are provided about how the framework was developed; it is assumed that decision-makers were not involved. This framework was a useful starting point for the current study, removing the need to develop a framework from scratch and providing a technique for encouraging interviewees' responses.

It became clear during the initial interviews that the framework was not as useful as it could potentially have been. Some dimensions, such as 'social acceptability' and 'cultural adaptability', were misunderstood as referring to the social or cultural context, rather than acceptability or adaptability. The concept of transferability was also poorly understood and frequently neglected. Whilst some elements were almost universally considered to be unimportant, notably the education level of the target audience, other factors that were valued by decision-makers had not been included e.g. congruence with previous experience. It can be hypothesised that if decision-makers' perspectives are actively incorporated in the development of frameworks and tools, the frameworks may be more useful as a result.

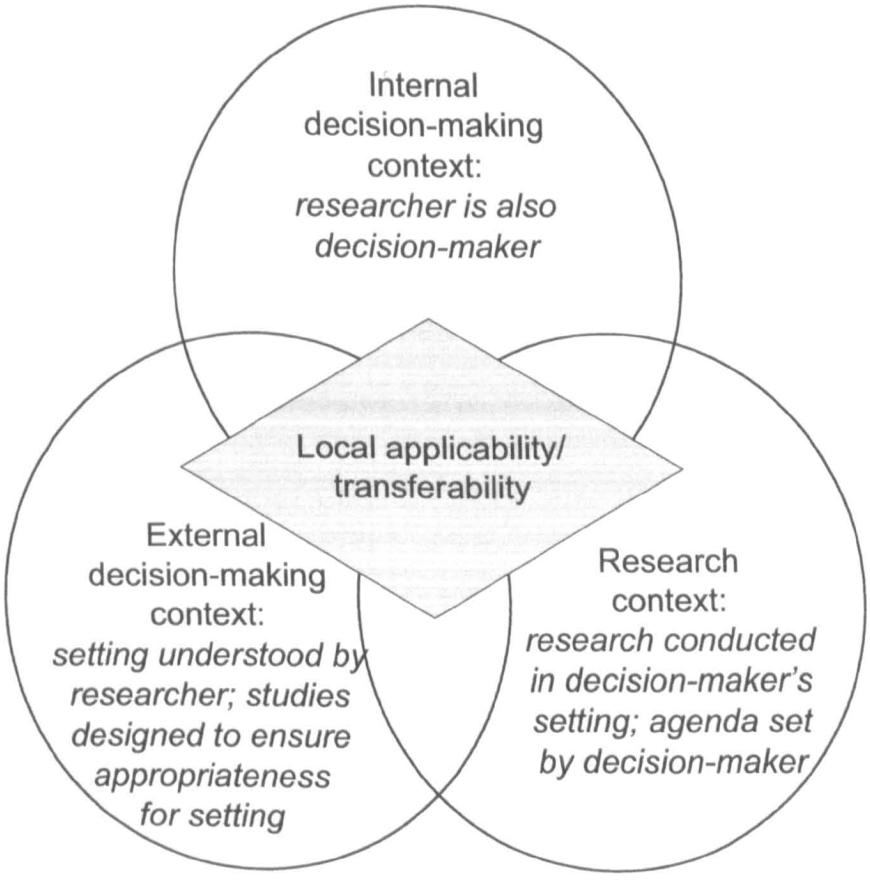
4.3.2 The broader conceptual framework

The broader conceptual framework illustrated how local applicability/transferability may be influenced by the internal and external decision-making contexts as well as by the research context. This provided a useful structure for the analysis of research production and decision-making in Ghana.

Although presented in relation to the twin concepts of global health research and essential national health research in chapter 2, the findings suggest that there may be more nuanced variations in the types of research that are likely to be considered locally applicable/transferable. Research that was secondary to an interviewees' main work (e.g. as a health

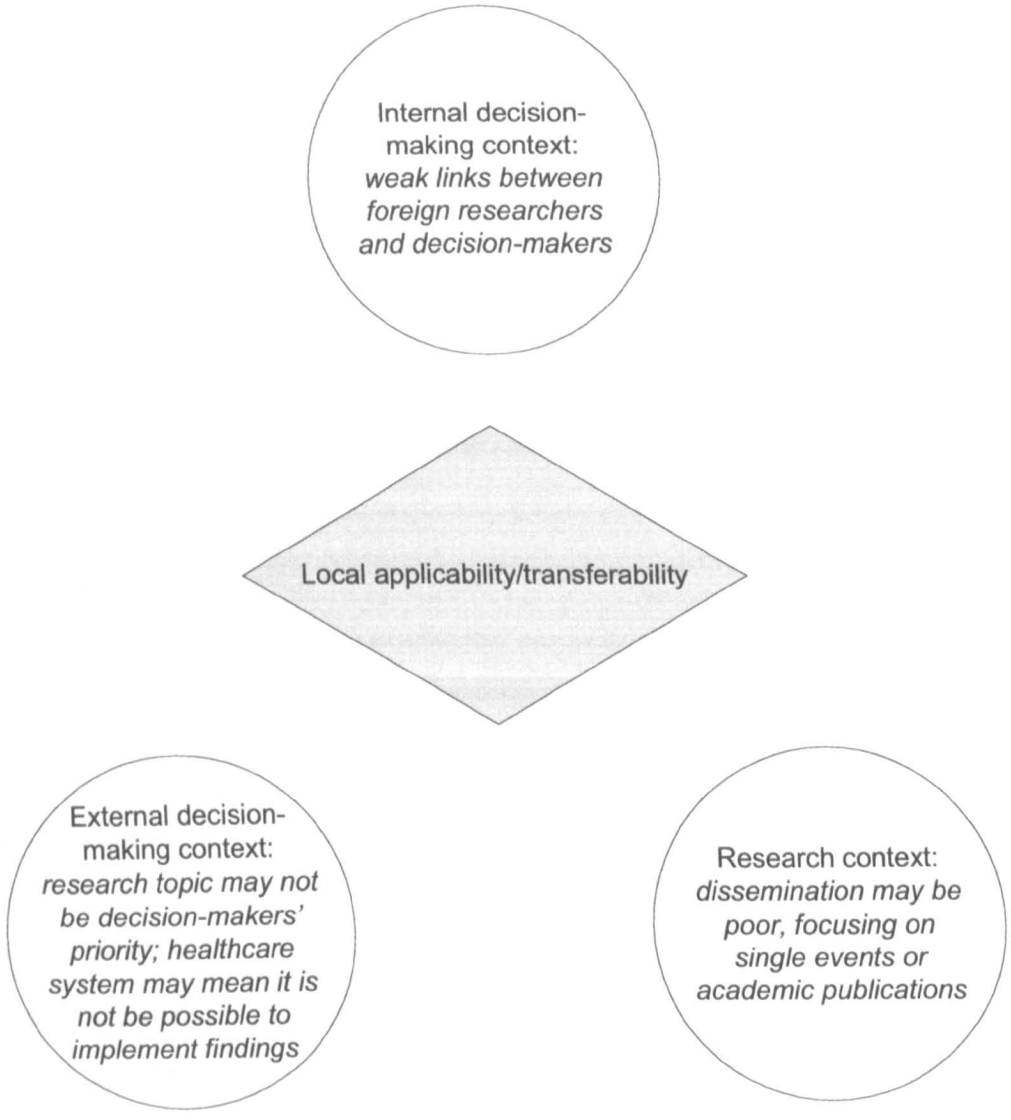
professional or NGO worker) maps well to the 'ideal' example presented, where the research and decision-making contexts overlap extensively, such that the study is highly likely to be considered locally applicable/transferable (as shown in figure 11). In these cases the professional conducting the research would set their own research agenda, so ensuring that the topic was pertinent to them and well suited to their own setting. The internal decision-making context would also be closely aligned to both the research and external decision-making contexts, since the professional conducting the research would also be the decision-maker who would then be in a position to act on the findings.

Figure 11: Research with high probability of being considered locally applicable/transferable



In contrast, research conducted both within and outside Ghana may have disparate research and decision-making contexts, such that the local applicability/transferability of study findings may be less likely to be automatically considered high (as shown in figure 12). For example, if research conducted within Ghana is led by researchers from elsewhere, they may select a topic that is not of interest to Ghanaian decision-makers or is difficult to act upon due to the healthcare or regulatory infrastructure (i.e. the external decision-making context). Such studies may have been poorly disseminated to decision-makers, since emphasis is frequently placed on academic publication and the researchers are often only temporarily present in-country (e.g for data collection only) (i.e. the research context). In addition, these researchers may not have strong links with Ghanaian decision-makers, as these tend to be strengthened with repeated contact over time, something is more likely for those based within Ghana (i.e. the internal decision-making context).

Figure 12: Research with lower probability of being considered locally applicable/transferable



The conceptual framework was helpful in structuring the data collection and analysis. However, its use has been limited for a number of reasons. Firstly, difficulties were encountered in using Wang et al.'s framework in the interviews. Secondly, although the broader framework was useful in describing the research and decision-making contexts, it was not possible to assess the impact that each context had on perceptions of use and usefulness. As such, its utility in helping to understand how local applicability/transferability are formed or shaped was limited. It is clear that

there remains scope for further developments in conceptual understandings and theories of how local applicability/transferability is understood and assessed.

5. Strengths and Limitations of the Study

There has been relatively little published research about local applicability/transferability. Most of the articles on the topic are theoretical essays and commentaries, rather than empirical studies. This study attempted to address this gap, by exploring perceptions of local applicability/transferability amongst both researchers and potential research users. There has also been little exploration of the views and needs of decision-makers with regards to research and research use in low income countries; the current study has attempted to examine these perspectives.

The utility of existing local applicability/transferability framework, developed by Wang et al., was tested in the interviews and a new framework was developed based on researchers' and research users' perceptions. In addition, innovative techniques were used to study these perceptions. These add to the methodological evidence base for studying research use perceptions. Their role in the current study confirms the usefulness of employing a variety of techniques to explore complex, abstract issues in qualitative research, both in terms of the triangulation of responses and, in a more practical sense, as tools for generating discussion.

One limitation of the current study that was touched upon in chapter 2 is that the researcher was an 'outsider' in Ghana. This may have biased responses (particularly because the researcher came from a high income country) and may have caused misinterpretations of responses. Social desirability bias is a potential concern, particularly with regards to the positive attitudes expressed towards research use in general. Although

impossible to remove the 'outsider' label (without replacing the researcher with a Ghanaian interviewer), certain steps were taken in order to ensure that the researcher was familiar with Ghanaian culture. The fieldwork took place over a relatively long period of time (over 14 months in total) during which time the researcher was living in a Ghanaian household (as opposed to staying in accommodation with other expatriates). It was frequently commented that the researcher had 'become a Ghanaian', due to her understanding and use of common phrases, mannerisms and ways of thinking. As such, it was felt that the researcher had developed a good grasp of the intricacies of both verbal and nonverbal forms of communication that were culturally specific to Ghana. However there remains some risk of misinterpretation or overlooked nuances in the interpretation of responses.

5.1 Generalisability of the study findings

This study did not set out to collect data that would be generalisable to all low income settings, or indeed to other areas of public health. However the rigour applied to the study process, in documenting the data collection and analysis methods, means that the study design is transferable to other settings and topics. If other studies were conducted using this process, it would enable a body of knowledge to be developed, across which commonalities and differences could be explored.

Other studies have found that research and decision-making contexts vary for different health topics, even within the same country (Dobrow et al., 2006; Lairumbi et al., 2008). This suggests that perceptions of local applicability/transferability may also vary depending on the topic being considered.

In setting out a local applicability/transferability framework, it will now be possible to test its usefulness and appropriateness in other countries and in other areas of public health. It may then be possible to identify common

elements that are pertinent to all, or patterns that help to explain what and when research is considered useful and which dimensions of local applicability/transferability are prioritised in different circumstances. It would also be interesting to explore whether the framework could be adapted for use in assessing the local applicability/transferability of study types other than intervention evaluations (or even descriptions of unevaluated interventions).

6. Recommendations

6.1 Recommendations for further research

Further research is required to explore the concept of local applicability/transferability in greater detail and in other geographical and topical contexts. Additional work is needed in order to operationalise the local applicability/transferability framework. Studies will then be able to test it in different settings, with different topics and for a range of potential users.

Improved understandings of the twin concepts of global health research and essential national health research, as they apply to complex public health research, could be beneficial to those in both the research and policy fields. In particular it would be useful to further explore the types of public health research that may be considered global and essential national health research. In addition, improving our understanding of how these two concepts could be dissected further could strengthen awareness of the types of research that are more likely to be considered locally applicable/transferable. The current study found that essential national health research may be valued more than global research at the national level and particularly at the sub-national level. It would be interesting to explore whether global research was valued more at the international level and whether, and in what circumstances, exceptions exist.

Further research could explore the links between global policy, national policies and sub-national implementation decisions. In particular, the nature of evidence used in the development of these policies and decisions could be examined, alongside an assessment of the extent to which 'global evidence-based policies' remain true to their original empirical underpinnings.

Further exploration of the factors that lead to public health effectiveness research being considered of use (particularly at national/sub-national levels) would benefit those encouraging research use. For example, research could examine the factors that led to the perceived use and usefulness of high profile trials in Ghana. As examples of 'big' research assessing policy options, these would not necessarily have been expected to have been as valued as was found in the current study. The perceived value of multi-country studies should be explored further and the implications for perceptions of the value of systematic reviews should also be identified.

Future studies should not view research as a homogenous entity, nor neglect to recognise the different types of research producers. Those studying the use and perceived usefulness of research need to ensure that they understand the local terms used by study participants and should not assume an understanding of the meanings ascribed to commonly used terms.

6.2 Recommendations for encouraging research use in decision-making

Further research and action are needed to increase the appropriate use of research conducted in other settings. Strategies may target the decision-making contexts or the research context. Taking the latter first, research production in low income countries should increase. In-country research agenda setting should be encouraged, although given the strong links to

research funding, such efforts may require changes to international funding systems. International organisations and donors hoping to encourage research use in low income countries should fund local research, whose agenda is set by those in-country. Earmarked funds for health research may be necessary, given the current difficulties that the Ghanaian government has experienced in attempting to ring-fence two percent of its health budget for research. Specific funding for maternal health research is also needed.

Academic research in Ghana may benefit from increased opportunities to access competitive research funding sources. However institutional barriers would also need to be overcome, in order to provide incentives for academics to seek funding for research studies. The Ghana Health Service Health Research Centres should explore how best to maximise the potential use and usefulness of their research beyond the original district or region that studies are conducted in. Improved reporting of certain types of information (e.g. around implementation) could increase the potential benefit of intervention evaluations. The provision of more detailed guidance as to how to report information relating to applicability/transferability in statements such as CONSORT, STROBE and TREND could encourage this (Des Jarlais et al., 2004b; Vandenbroucke et al., 2007; Moher et al., 2010).

The importance of sub-national decision-makers as potential research users should not be overlooked, particularly in decentralised health systems. If research is to be used more systematically in decision-making, the current ad hoc means of finding out about research in Ghana needs to be addressed. Awareness of and access to research are particular challenges for research use by these decision-makers. Although improving access to computer and internet infrastructure for sub-national government staff would require substantial investments, other options could be more feasible in the short term. For example, if research studies conducted in

Ghana were compiled into a database, this could be distributed as a CD-ROM, or even in paper form.

Those advocating greater use of research should also recognise that the use of research in policy decisions is likely to remain limited when such decisions are made autocratically.

Those attempting to encourage research use should be aware that interpretations of the content or impact of interventions may vary between research users, even when the same information is presented. This is a particular concern for the multi-component intervention evaluations that are common in public health.

Those encouraging research use should appreciate that prior experience or knowledge of a policy or intervention may negate research use. Strategies to address this challenge should be devised, for example by involving decision-makers in the research process. An alternative strategy could be to attempt to synthesise examples that were well known, though not evaluated, with research findings, rather than simply to present the research (or syntheses of research) in isolation.

Within-country differences may affect perceptions of local applicability/transferability and should be recognised by researchers and those encouraging research use.

Global policy influence is such that there is a need for awareness of both the nature and extent of research use at the global level. In addition, further examination of how best to enable national and sub-national decision-makers to assess the local applicability/transferability of global policies, in the light of local evidence and realities, would be constructive. An awareness of the potential for and implications of 'imposed' research use should also be considered.

Finally, a dialogue needs to be started about the value, role and nature of research in public health decision-making, involving proponents of the

evidence-based movement and other public health stakeholders from both high and low income countries.

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Original Summaries (presented in initial 15 interviews)

Ahluwalia et al., 2003, 'An Evaluation of a Community-Based Approach to Safe Motherhood in Northwestern Tanzania'

Context: Tanzania
Maternal mortality ratio in region = 297 per 100,000 live births

The communities involved had a history of organising and mobilising resources to address health-related problems.

Intervention:
As part of a larger project, community-based plans for transportation to health facilities were developed, using a community empowerment approach.

Initial interviews and focus groups in the community found that:

- lack of options and money for transportation to health facilities delayed the receipt of timely services
- obtaining transport was considered a family, rather than a community, responsibility
- hiring transport was very expensive
- very few pregnant women were referred to health facilities
- initial prenatal visits often occurred after the fifth month of pregnancy

Village leaders initiated meetings to discuss, refine and implement transportation plans for their communities. The project ran for four years, with the final evaluation taking place one year after the project's completion.

Findings:
A range of transportation plans were chosen, with modified tricycles with platforms most popular (21 out of 52 villages chose this method), followed by motorboats or canoes (11 villages). Other plans included emergency funds, reconditioned motor vehicles, tractors with trailers and ox carts.

Forty-four villages (85%) had developed action plans for transporting people with health emergencies to health facilities. Twelve (23%) had a specific implementation system in place and in ten (19%), systems had been used at least once in the last three months. Five of these ten functioning systems were from the most remote areas. At least 36 women with obstetrical emergencies and 12 people with other health-related emergencies had used the transport systems to seek hospital care.

One year after completion of the project, the majority of communities reported that emergency transport provisions were the responsibility of the community, rather than the individual.

The cost of emergency transport fell from US$10 – US$100 before the intervention to <US$1 – US$10 afterwards.

Bossyns et al., 2005, 'Cost-effectiveness of an emergency referral system in Niger'

Context: rural Niger
Scattered, isolated population. Poor roads and few cars.
Maternal mortality ratio = 1600/100,000 live births.

Intervention:
- solar-powered radio-link among health centres and district hospital
- 'Land Cruiser' type vehicle with mattress in the back, with pay-per-use service (fee dependent on distance)

For obstetric emergencies, a midwife accompanied the driver and was often able to treat the patient at the health centre, rather than transfer them to the hospital. Calls were also made to report outbreaks of measles or dysentery. In these cases, the ambulance carried drugs and nursing personnel to the villages.

Findings:
The number of obstetric emergencies evacuated and dealt with increased markedly.
There were more emergency calls from health centres nearer to the district hospital, compared to those further away.
The most frequent recorded reason for calling for emergency assistance was for obstetrical problems (47%), followed by medical problems (43%) and surgical problems (10%).

Discussion:
Other benefits were also seen:
- improving health centre staff morale
- improving health centre relations with the population.
- better communication between health centre and district staff
- improvements to supplies and lab use for health centres

However, problems with the system remained:
- non-emergency use of ambulance
- geographical inequities (those living far from a health centre may have been unable to reach them for a referral)
- financial barriers to use, particularly for those living far from the hospital.

Long term, the system is not viable without some degree of public subsidy or the introduction of solidarity mechanisms.

Fullerton et al., 2005, 'Outcomes of a Community- and Home-Based Intervention for Safe Motherhood and Newborn Care'

Context: Rural India
Very limited public transport, car ownership is rare.
Most births are at home, without a skilled attendant.
Maternal mortality ratio in India = 440 per 100,000 live births

Intervention:
Training women and their primary family caregivers and home birth attendants home-based lifesaving skills. This included knowledge and skills to:
- keep pregnant women healthy
- recognise life-threatening maternal and newborn problems
- promote the adoption of first aid care and referral at the individual and community levels to prevent maternal and neonatal deaths

Findings:
There was a statistically significant difference in the number of women who had developed at least one aspect of a birth preparedness plan (82% of women surveyed after the intervention, compared to 15% before). After the intervention, 82% had saved money, 77% had made transport arrangements and 77% were aware of the referral site.
Despite this, there were only a few referrals to the community obstetric care facility, with women tending to continue to use traditional (non-professional) healers.
The number of maternal deaths declined, however the study sample was not large enough to ascertain if this was due to the intervention or down to chance.

Essien et al., 1997, 'Community Loan Funds and Transport Services for Obstetric Emergencies in Northern Nigeria

Context: Northern Nigeria

Intervention:
Established a community emergency loan programme and transport scheme. The transport scheme encouraged the voluntary participation of transport owners, asking them to agree to be available 24 hours a day, seven days a week and to charge set fares (according to distance).

Both the loan fund and the transport scheme were launched three times over the course of one year.

Findings: 81 annual and 2274 one-time contributors paid a total equivalent to US $20,500 to the loan fund. 18 loans were approved in nine months. 23 drivers pledged permanent participation and 58 pledged to take part in six month rotations. 18 women with obstetric complications were transported.

Participation increased with each successive launch.

Sixty per cent of the cost of the interventions was paid by the community.

Revised Study Summaries (used from interview 16 onwards)

1. Tanzania

Intervention
Community-based plans for emergency transportation to health facilities were developed, using a community empowerment approach. The project ran for four years.

Results
A year later, 85% of villages had developed action plans, 23% had a specific implementation system in place and 19% had used the system at least once in the last three months. The cost of emergency transport fell from US$10-100 before the intervention to <US$1-10 afterwards.

2. Rural Niger

Intervention
A solar-powered radio link between health centres and the district hospital was established. A landcruiser vehicle, with a mattress in the back, was used to transport health emergencies. The cost for use depended on the distance travelled.

Results
The number of obstetric emergencies evacuated increased markedly. Other benefits included improving health centre staff morale and communication between health facilities.

3. Rural India

Intervention
Women and their primary family caregivers/home birth attendants were trained in home-based lifesaving skills (i.e. to recognize life-threatening maternal and newborn problems provide first aid care and refer to a health facility).

Results
There was a statistically significant increase in the number of women who had developed at least one aspect of a birth preparedness plan after their training (82% after, compared to 15% before). After the intervention, 82% had saved money, 77% had made transport arrangements and 77% were aware of a referral site.

Despite this, women tended to continue using traditional healers; there were only a few referrals to facilities.

The number of maternal deaths declined after the intervention, although the study sample was not large enough to know if this was due to the intervention or due to chance.

4. Nigeria

Intervention
A community emergency loan programme and transport scheme were established. Transport owners agreed to be available to transport obstetric emergencies and to charge set fares according to distance.

Results
81 annual and 2274 one-time contributors paid a total equivalent to US$20,500 to the loan fund. 18 loans were approved in nine months. 23 drivers pledged permanent participation; 58 pledged to take part in six-month rotations. 18 women with obstetric emergencies were transported.

Appendix 2: Local Applicability/Transferability Assessment Tool

Program A

Criteria	Rating	Weight	Score
Applicability – can it be done here?			
Political environment / barriers to implementation	3	2	6
Social acceptability	2	2	4
Cultural adaptability	4	2	8
Resource implications	3	1	3
Educational level of target population	5	1	5
Transferability – would it be effective?			
Baseline prevalence of disease / risk factor	2	1	2
Characteristics of target population	1	1	1
Capacity to implement intervention	2	2	4
TOTAL SCORE			**33**

Program B

Criteria	Rating	Weight	Score
Applicability – can it be done here?			
Political environment / barriers to implementation	4	2	8
Social acceptability	4	2	8
Cultural adaptability	1	2	3
Resource implications	2	1	2
Educational level of target population	2	1	2
Transferability – would it be effective?			
Baseline prevalence of disease / risk factor	2	1	2
Characteristics of target population	1	2	2
Capacity to implement intervention	1	2	2
TOTAL SCORE			**29**

		Study 1		Study 2		Study 3		Study 4	
Criteria	**Weight**	**Rating**	**Score**	**Rating**	**Score**	**Rating**	**Score**	**Rating**	**Score**
Applicability – can it be done here?									
Political environment / barriers to implementation									
Social acceptability									
Cultural adaptability									
Resource implications									
Educational level of target population									
Transferability – would it be effective?									
Baseline prevalence of disease / risk factor									
Characteristics of target population									
Capacity to implement intervention									
TOTAL SCORE									

Information Sheet for Interviewees

Perceptions of Relevance of Research for Maternal Health Policy in Ghana

Investigator's name: Helen Burchett Helen.burchett@lshtm.ac.uk

Phone number: 024 836 0560

You are being invited to participate in a research study. This study is part of a PhD that is looking at people's perceptions of the relevance of research to maternal health policy in Ghana. I am interested in finding out what information you think is important when deciding whether or not a research study is relevant to the Ghanaian policy context.

You have been chosen to take part because of your interest and involvement in either maternal health or research agenda-setting in Ghana. I am interviewing a wide range of people involved in maternal health policy and research in Ghana.

If you decide to take part, everything that you say during the interview will be confidential and your name will not be kept on any transcripts produced from the interview. If it is not possible to keep your data confidential (e.g. because you have a unique job title or position), I will agree with you a mutually acceptable solution. If you do not wish to be quoted, I will not quote you. With your permission, the interview will be recorded and transcribed. You are free to withdraw from this study at any time.

The interview tapes will be destroyed at the end of the study (approximately 2010). The anonymised transcripts will be stored with a Public Data Archive Service indefinitely.

This study has been funded by the Economic and Social Research Council (UK).

A summary of the study findings will be sent to you on completion of the research.

Consent Form

Perceptions of Relevance of Research for Policy in Ghana

I have read and understood the information sheet for this study.

My questions concerning this study have been answered by Helen Burchett.

I understand that the interview will be recorded unless I specifically ask for it not to be.

I understand that I may withdraw from this study at any time.

I agree to take part in this study.

Signed: _____ Name (printed): _____

Organisation: _____ Date: _____

Email address: _____

Individual Interviewee's Information

- current role
- organisational description
- own research conducted
- education
- previous employment
- current policy involvement
- previous policy involvement

Maternal Health

- maternal health situation
- maternal health policies
- fee exemption policy
- policy-making process
- maternal health organisations involved in policy process

Research Use

- access to research
- usefulness of research
- usefulness of non-Ghanaian research
- usefulness of research to others
- research use in policy
  - type of research
  - conceptualisations of research
- barriers to research use/evidence-based decision-making

- own use of research

Research Issues

- research agenda setting
- research collaboration
- research funding
- dissemination
- maternal health research needed

Local Applicability/Transferability

- local applicability/transferability brainstorm, or spontaneous mention of related issues
- local applicability/transferability rating question
- local applicability/transferability other
- study ranking exercise
  - Tanzania study
  - Niger study
  - India study
  - Nigeria study
  - additional information required for study ranking exercise

- local applicability/transferability dimensions:
  - acceptability
  - adaptability
  - burden
  - cause
  - effectiveness
  - existing project
  - geographical location
  - implementation
  - intervention focus
  - method
  - population
  - resources
  - setting
  - sustainability

Appendix 5: Example of Excel Spreadsheets Used in the Analysis

Inter-viewee code	Maternal Health Situation	Fee Exemption Policy
35	MM is still high - various reasons ranging from inaccessibility to health services to people's perceptions. I'm not sure what are main challenges currently. Main concern is that MM is still high and needs to be reduced. But not sure about what specific issues are considered major. In my opinion one of the issues is still to increase levels of supervised delivery, facility-based delivery - most problems are at time of delivery. If there is a complication and the woman is at home, it becomes difficult to get the woman to a facility in a reasonable time. National issue - high ANC, low delivery coverage.	Just recently this issue of free services for pg women and whatever has been introduced. Some people would question whether those kinds of interventions actually get to people who really need them. I don't know. And whether that would encourage people to actually go to the facility to deliver. It's still a big question - we'll wait a couple of years and see its impact, it's too soon to think about impact. But whether a rural woman would go to a facility to deliver if she won't have to pay, it's not that easy - still too many hidden costs that even the free service policy won't address e.g. cost of going away from home and someone will need to go with her - I don't think the policies we have address these costs and these may be the ones that would influence a decision to access the service.
58	3 critical challenges - manpower situation, skilled attendance is critical for us. After so many years, less than 50% deliveries with skilled attendant then it's a problem. Because of that we've been using TBAs and others - who can't help in emergencies. - provision of equipment in facilities, there are major gaps, even basic - funding, make sure you are putting in place the various structures.	it is just one intervention. High ANC, low delivery - some relate it to financial barriers. Facilities function is challenge. Leading to overcrowding, there's a little problem with reimbursement. "But I think I'm comfortable with the policy" [some unclear]

Appendix 5: Example of Excel Spreadsheets Used in the Analysis

Inter-viewee code	Barriers to research use / evidence-based decision-making	Non-Ghanaian Research Use	Type of research
16	I think the issue of data is really a very crucial one. Even when the health sector has said that it is going to do maternal autopsies, this data is not really completely analysed. So most of your planning is based on the less than 24% of deaths that are registered or happening in health facilities. So if you use this to generalise to the whole country, it could have some consequences.	p127: [research outside Ghana - how useful?] yuh, some of this research is done not in Ghana, like institutions like WHO or Pop Council will come and say ok we've done it in India, we tested it in Vietnam, let's see how it will be adapted and used here. I think we have done. Many times.	p113: [important research?] in any area there always has been research. e.g. R3M - wanted baseline MMR and morbidity - so got funding for survey. So we know from where we're going. So this is one of the key important information from research. And I don't even want to mention the standard data - DHS - periodically done. Also situation analyses/facility-based survey. Snapshot of what is happening in clinic in terms of Quality of Care, availability of commodities etc - so you go to pm and say 'listen you need to revamp this, provide training etc'. Haven't discussed all of them but these are important ones.
17	Where availability of data is an issue, it wouldn't probably provide the necessary information for which policy can be built. Because you see, if you have the evidence available that these are the people who are dying, this is where they're located, this is what's killing them - I'm sure if you are looking for information on MM it varies, it's not reliable - it doesn't give us anything to really develop our interventions because	I think research outside Ghana, like WHO's skilled attendance report - I think that has actually influenced a lot our policy in terms of how we perceive TBAs. P67: "But clearly I think research done in other countries, especially	p40: global policy influence, rather than local need p42: own research, work with other research orgs, DHS is v good data source. Waiting for MMR report p50: we work closely with InDepth Network - does research work using 3 DSS sites - so they have quite a lot of research that we sometimes draw on. p55: [any imp study?] that's a difficult one.

Inter-viewee code	Barriers to research use / evidence-based decision-making	Non-Ghanaian Research Use	Type of research
	policies guide the intervention strategy. So once data is not available for well informed decisions to be made so that you can formulate policies around those issues, it obviously affects our intervention strategies because what probably the issues are not identified so your interventions may be addressing something which is not really an issue.	countries that have similar characteristics as Ghana, I mean, are quite useful or studies that are multi-country studies, quite useful."	Maybe again, the DHS - but more at morbidity and proxy indicators like skilled attendance. I think that is actually v helpful and the MICS that Unicef undertakes, that's also v good. Those 2 because they're national and quite reliable and are done at regular intervals. p67: multi-country or other country studies are quite useful, especially if similar characteristics.

Appendix 5: Example of Excel Spreadsheets Used in the Analysis

Inter-veiwee code	Study ranking order	Tanzanian study: positive reasons	Tanzanian study: negative reasons	Nigerien study: positive reasons	Nigerien study: negative reasons
31	India Niger Tanzania Nigeria	Once again the community was empowered (as in India). The results that happened here same will have happened in Ghana	What happened after 4 yrs? No information given	Most of our areas don't have the communication / radio links between facilities, so such an arrangement will be beneficial	
21	India Nigeria Tanzania Niger	Community empower-ment: depends what you mean. TBAs trained, taxi agreement. This is possible.		Definitely emergency evacuations would increase	Service provider is missing. It would work in Ghana but how many Land Cruisers would you need? sink a lot of money into it

Inter-veiwee code	Study ranking order	Indian study: positive reasons	Indian study: negative reasons	Nigerian study: positive reasons	Nigerian study: negative reasons	Any additional information required?	Comments
31	India Niger Tanzania Nigeria	Because it involves empowering the community - everything was then left to them.			There is a mindset that a public sector loan is a gift - won't pay back, so programme will	Tanzanian - were communities still doing plans after 4yrs? And what were results? Will emergency	

Inter-veiwee code	Study ranking order	Indian study: positive reasons	Indian study: negative reasons	Nigerian study: positive reasons	Nigerian study: negative reasons	Any additional information required?	Comments
		Once they were able to recognise danger signs, they'll make preparations so this is applicable to our local community, they will have done the same thing in the same situation			come to a halt [population; implementation; sustainability - interlinked]	transport costs fall after end of project?	
21	India Nigeria Tz Niger	Yes, already being done in Ghana	But now they're not training TBAs Only few referrals - because other factors	Similar to what I described		Culture; context; need to understand environmental issues that affect what people do gender analysis - you may empower the people but resources	Interprets Tanzanian study as TBA training, Describes taxi scheme said ranking on feasibility because they are all relevant. Looking at economic

Inter-veiwee code	Study ranking order	Indian study: positive reasons	Indian study: negative reasons	Nigerian study: positive reasons	Nigerian study: negative reasons	Any additional information required?	Comments
							resources that go into the intervention and coverage for that amount of resources

Appendix 6: Maternal Health Research in Ghana

Study	Status	Organisations involved	Funding organisation	Reference
Defining the Health Problem				
Maternal health survey 2007	Completed	GSS;GHS; Macro Int.	Anonymous	[3]
Sisterhood method MMR survey	Completed	HRC	PopCouncil	?
Ghana demographic and health survey	Completed 1993, 1998, 2003, 2008	DSS, Noguchi, GHS, ORC Macro	USAID	[2, 5]
Multiple indicator cluster survey (MICS)	Completed 2006?	GSS, MoH, UNICEF, Macro	Dutch, MoH?	[6]
Ghana service provision assessment survey	Completed 2002	GSS, HRU, ORC Macro	USAID	[4]
Maternal health care in five Sub-Saharan African countries	Completed	RIPS, UoG	?	*Unpublished*
Cultural factors influencing non-use of delivery facilities in Ashanti region	**Ongoing**	School of Public Health, UoG	NORAD?	?

Study	Status	Organisations involved	Funding organisation	Reference
Poverty and maternal health in Ghana: A spatial analysis of exclusion from care	**Ongoing**	RIPS, UoG, Uni of Southampton	DfID; ESRC	?
Social context of maternal health	Completed 2005?	HRC	?	
Causes and consequences of teenage pregnancy	Completed, ?	NGO	UNFPA	
Current situation and needs of teenage mothers	Completed, ?	NGO	UNFPA?	
KAP baseline survey on reproductive health issues in Northern Ghana	Completed, 2003	GHS, HRC	UNFPA	[9]
Assessing potential policy and programme options				
Obaapa Vita: vitamin A supplementation for women of reproductive age	**Ongoing**	HRC; LSHTM	DfID;	
Evaluation of policy of universal fee exemption for delivery care (IMMPACT)	Completed	Noguchi, University of Aberdeen	Gates, DfID, European Commission, USAID	[1]
Pilot study training nurse-midwives in life saving skills	Completed	?	?	?

Study	Status	Organisations involved	Funding organisation	Reference
Identifying implementation considerations				
Acceptability and feasibility of introducing the WHO focused antenatal care package in Ghana	Completed, 2006	Population Council, Noguchi, Tema General Hospital, RCH Unit, MoH	USAID	[7]
Quality of care study	Completed?	?	?	?
Assessment of capability for delivering EmOC	Completed?	GPMMN	?	?
Maternal audit study?	Completed?	?	World Bank?	?
Situation analysis/baseline facility assessment	Completed, 2005	GHS	?	?
Study of non-use of delivery services following fee exemption in a Greater Accra district	Completed	GHS	?	?
Active management of the third stage of labor in health care facilities: national survey	Completed, 2008	MoH, GHS, PATH, Management Sciences for Health, Johns Hopkins University	USAID	[8]
Intermittent presumptive treatment for malaria in pregnancy: situation analysis & qualitative study	Completed	GHS, ?	Malaria Control Programme	?

*http://www.soton.ac.uk/socsci/ghp3/projects/globalhealth/Maternal/maternalhealth.html

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